MASTER'S THESIS

The moderating role of cultural dimensions in cross-country research between technostress and job burnout

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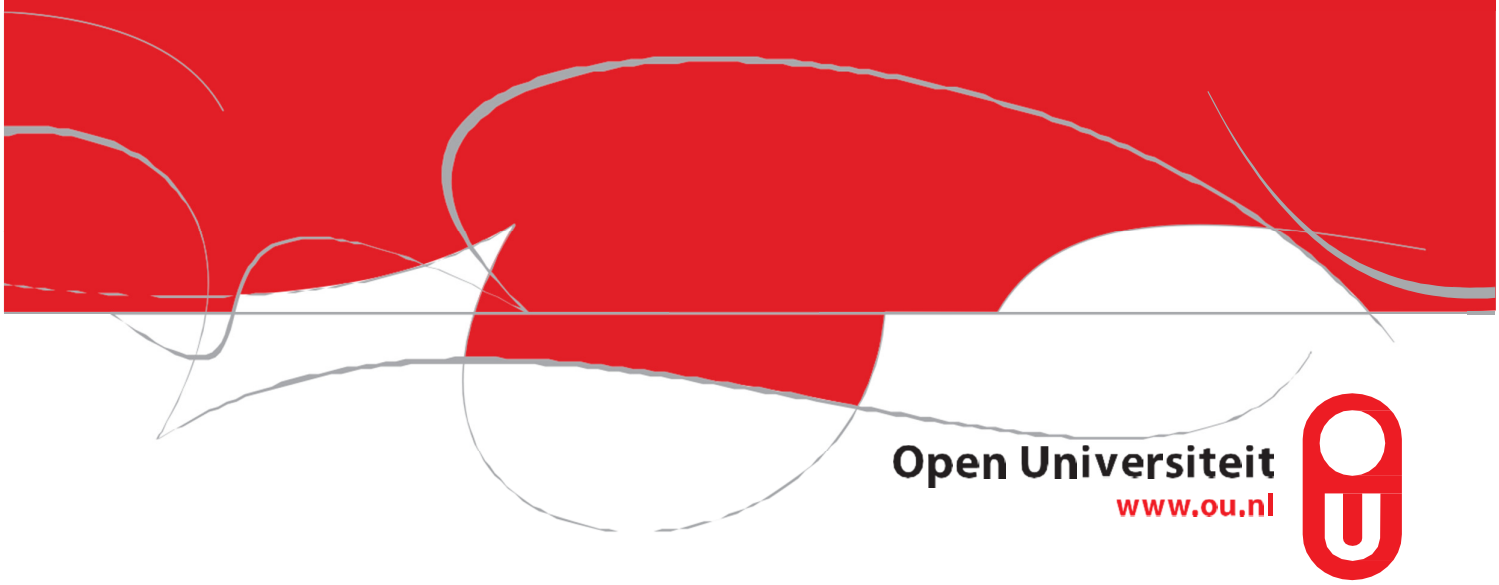
Award date:
2020

IM0602
IM9806

BPMIT graduation project

BPMIT graduation assignment preparation (IM0602)

Business Process Management and IT Graduation Assignment (IM9806)



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De modererende rol van culturele dimensies in landoverschrijdend onderzoek tussen technostress en job burnout

The moderating role of cultural dimensions in cross-country research between technostress and job burnout

Opleiding:	Open Universiteit, faculteit Betawetenschappen Masteropleiding Business Process Management & IT
Degree programme:	Open University of the Netherlands, Faculty Science Master of Science Business Process Management & IT
Course:	IM0602 BMPIT Graduation Assignment Preparation IM9806 Business Process Management and IT Graduation Assignment
Student:	B.P.B. Smeets
Identification Number:	
Date:	03-07-2020
Thesis supervisor:	Lars Rieser
Second reader:	Prof.dr.ir. Remko (R.W.) Helms
Version Number:	1.0
Status:	Final version

Abstract

The rapid pace of technological innovation impacts employees and organizations, forcing them to deal with the phenomenon of technostress. This paper uses Lazarus' and Folkman's Transaction Model of Stress and Coping to conceptualize external factors as Hofstede's cultural dimensions and determine whether or not they impact the relationship between stressor and strain. The study hypothesizes that technostress increases job burnout and that the cultural dimensions of indulgence, individualism, and power distance moderate this relationship. Based on empirical survey data from 286 employees spread over Germany, Romania, and The Netherlands, the results indicate that the direct relationship between technostress and job burnout is highly significant, except for employees working within the research & development department. The cultural dimensions of individualism and power distance did not provide evidence for moderation, whereas the dimension of indulgence moderates the relationship with only a small effect – especially in The Netherlands. Although not all hypotheses are supported, there is evidence that cultural dimensions do influence the relationship between technostress and job burnout. These findings open the door for future research because it indicates that cultural dimensions have an impact on the relationship, and there are still other cultural dimensions and national contexts to explore.

Key terms

Cross-Culture, ICTs, Job burnout, Technostress

Summary

Information and Communication Technologies develop rapidly, impacting people and companies all around the globe. It allows organizations and employees to work more efficiently and improve productivity while simultaneously dealing with the direct and indirect adverse outcomes of technology. In particular, the phenomenon of technostress, which is referred to as stress that individuals experience due to the use of information systems. Most research in the technostress domain focusses on investigating the impact of adverse outcomes on technostress. Several researchers emphasize that future research should extend to other national contexts, and focus on cultural areas or domains that could play a role in technostress formation or how culture impacts the relationship between stressor and strain. This research aims to fill this gap by answering the following question: *Do national culture dimensions impact the relationship between technostress and a technostress outcome?* The objective of this study is (1) to understand the effect of cultural aspects on the relationship between technostress and job burnout, and (2) to compare the collected data of different countries in order to identify differences between nations.

This research builds on the existing theory of Lazarus' and Folkman's Transaction Model of Stress and Coping (TMSC), by conceptualizing the external factors as cultural dimensions based on Hofstede's Framework of National Culture. The structural model contains the cultural dimensions of power distance, indulgence, and individualism to test whether they moderate an already well-researched relationship, namely the relationship between technostress and job burnout.

A web-based survey gathered 286 responses from employees in Germany, Romania, and The Netherlands. Analyzing the results with the Partial Least Squares Structural Equation Modeling Technique (PLS-SEM) in SmartPLS 2.0, indicated that technostress does significantly increase job burnout, except for employees working within the research & development department. Furthermore, for the dimensions of individualism and power distance, no evidence for moderation was found, whereas indulgence moderates the relationship with only a small effect – especially in The Netherlands. The results show that when the level of technostress increases, people with a low level of indulgence will experience a higher increase in job burnout than employees with high indulgence.

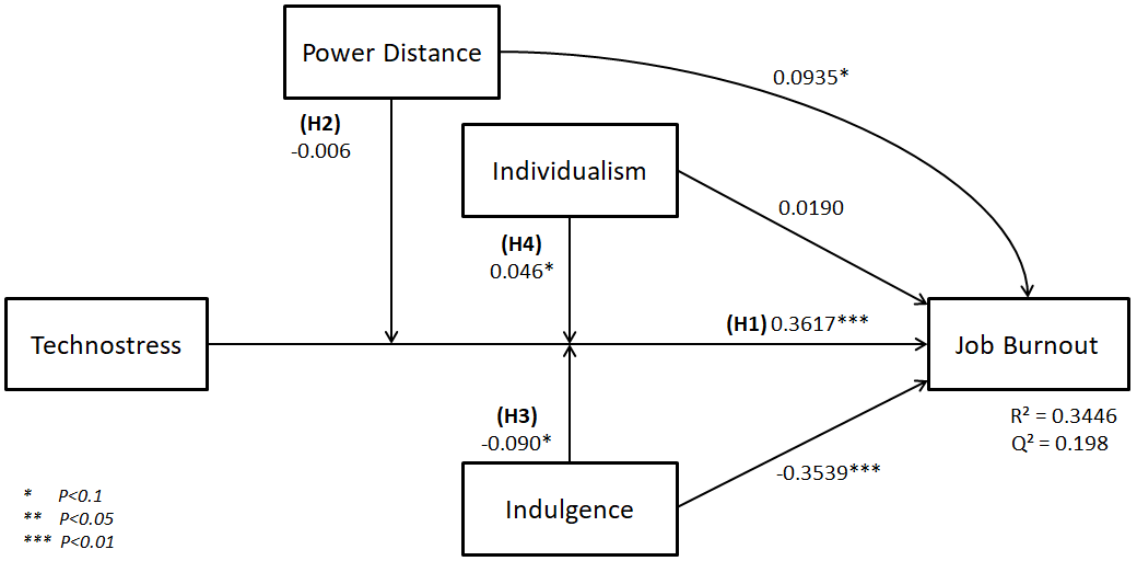


Figure 1, overview results of structural model.

Hofstede's model indicates major differences among the countries for the dimensions of indulgence, individualism, and power distance. However, when analyzing the survey data, it becomes clear that there are differences between the nations (see figure 2), but these are not fully in line with Hofstede's framework. Only the dimension of individualism comes close to the values of the Hofstede model. Moreover, multi-group analysis and parametric testing also did not provide any evidence for significant differences between the countries. Only in The Netherlands, the dimension of indulgence significantly moderates the relationship between technostress and job burnout.

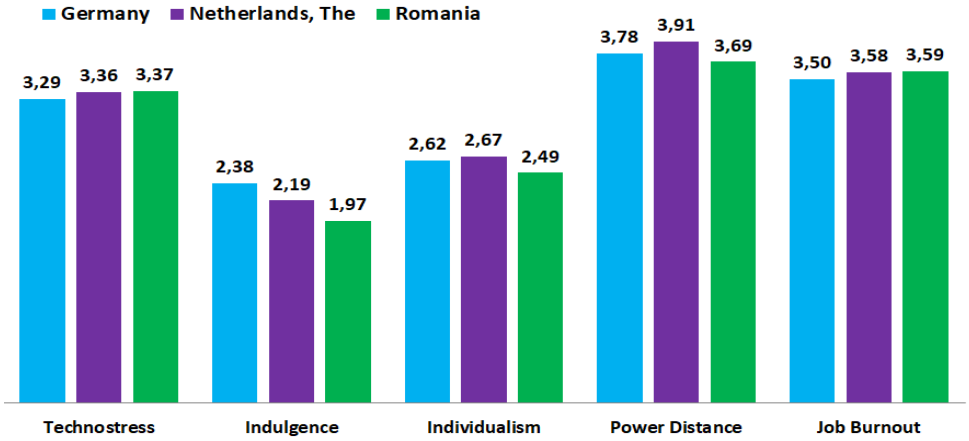


Figure 2, visualizing the sample means of the countries per dimension

Even though not all hypotheses are supported, and the research did not fully capture the cultural differences according to the Hofstede model, the findings contribute to the technostress literature. The findings show that indulgence moderates the relationship between technostress and job burnout within specific groups (e.g., The Netherlands, R&D, or employees that work more than 40 hours). This shows support for some parts of the stress and comping model of Lazarus and Folkman (1984) because the findings indicate that external variables (cultural dimensions) can influence the level of stress individuals experience. Furthermore, based on the survey data, there are differences between the values of the dimensions, which means that organizations should try to take culture into accounts when making strategies. It can help management to make better decisions for specific nations when dealing with technostress in organizations.

On the other side, there are several limitations worth mentioning. The collected data may be subject to biases because the sample is not entirely random, and data collection happened during the outbreak of the coronavirus pandemic. Moreover, measuring the technostress construct as a reflective construct could reduce the quality of the measurement because it does not focus on the underlying elements but the overall outcome. Besides that, this study used the model of Hofstede to identify differences between nations; however, the values found in this study deviate from the Hofstede model. Only the dimension of individualism comes close to the scores of Hofstede. Future research should include other national contexts, determining new cross-culture relationships, and examining the predictive role of cultural dimensions when it comes to technostress and job burnout.

Although not all hypotheses are supported, technostress is measured reflectively, and the sample group is subject to biases, the findings open the door for future research in this area. The study took a first step in exploring the impact of cultural dimensions on a well-researched relationship. There are still other cultural dimensions and national contexts to explore. Overall, we can conclude that cultural dimensions influence human behavior; however, it requires more follow-up research before stating that this also affects the relationship between technostress and job burnout.

Contents

1. Introduction

Over the past decades, Information and Communication Technologies (ICTs) have developed significantly, impacting people and companies all around the globe. The pace of technological innovation increases, requiring organizations and employees to continually renew their ICT-related skills (Wang, Shu, & Tu, 2008). The increased use of ICTs has had an impact on the way people work and the quality-of-life (Ayyagari, Grover, & Purvis, 2011). The impact of ICT has resulted in positive outcomes, such as being able to work more efficiently, breaking down the barriers for globalization, and improving productivity (Azam & Quaddus, 2013; Howells, 1995; Leidner, 2010; Weber & Kauffman, 2011). On the other side, there are also several adverse outcomes, such as dependency on technology, misuse of information, or IT-usage related stress (D'Arcy et al., 2014; Khedhaouria & Cucchi, 2019; Taradarf, Ragu-Nathan, & Tu, 2011). This research will focus specifically on a negative outcome associated with the use of ICTs, also known as technostress.

Technostress is referred to as stress that individuals experience due to the use of information systems. (Ayyagari, Grover, & Purvis, 2011; Taradarf, Ragu-Nathan, & Tu, 2011). Technostress is a relatively young and understudied area in information systems (IS) literature (Tarafdar, Cooper, & Stich, 2019). Various researchers have pointed out that it is important to study the area of technostress because it has direct and indirect adverse outcomes for employees and organizations (D'Arcy et al., 2014; Gaudioso, Turel, & Galimberti, 2017). The extant literature has mainly focussed on the antecedents in the technostress area, such as individual differences (e.g., age, education, or computer experience), environmental influences (e.g., innovation level, involvement facilitation, or technical support), and system attributes (Ma & Turel, 2018; Ragu-Nathan et al., 2008; Srivastava, Chandra, & Shirish, 2015). An extensive review of the technostress literature indicated that several researchers point out that the aspects of 'relationships within organizations' and 'organizational factors' remain an understudied area (Ayyagari, Grover, & Purvis, 2011; Tarafdar, Cooper, & Stich, 2019). Furthermore, Tarafdar, Cooper, and Stich (2019) suggest that the agenda for research in technostress should involve the effects of individual and organizational factors. These factors could impact the relationship between technostress and a particular outcome/strain.

From another perspective, most research in the technostress domain has focused on investigating the impact of adverse outcomes of technostress, such as job burnout, work overload, or loss of motivation (D'Arcy et al., 2014; Gaudioso, Turel, & Galimberti, 2017; Khedhaouria & Cucchi, 2019). Since stress and human behavior are closely linked to each other, it would be worthwhile to investigate the impact of cultural values because "*culture is an important determinant of human behavior"* (Ma & Turel, 2018, p. 145). One element widely used in IS literature might impact the degree to which people perceive technology as a stressor, namely culture. For instance, Erumban and de Jong's (2006) research indicates that national culture and the nation's ICT adoption rate are closely linked to each other. Furthermore, Hofstede (2001) points out that national culture aspects impact the speed of adoption when organizations introduce new ICTs. D'Arcy et al. (2014) express that technostress should be contextualized to cultures in future research.

The role of cultural aspects in the area of technostress is still relatively unknown. It could be that a difference in culture can lead to different interpretations of technostress. Research by Hofdstede (2001) and Erumban and de Jong (2006) show that cultural values influence the way people work and interact with their environment. A recent study performed in China indicated that national cultural factors could explain a portion of the technostress formation (Ma & Turel, 2018). However, several researchers emphasize that future research should extend to other national

contexts, and focus on specific cultural areas or domains that could play a role in technostress formation or how culture impacts the relationship between stressor and strain.

This research aims to fill this gap by answering the following question: *Do national culture dimensions impact the relationship between technostress and a technostress outcome?* It does this by using the elements of Hofstede's cultural framework. This framework proved that national culture could be classified alongside six dimensions, impacting the interaction and way of working in different environments/countries (Hofstede, 2001; Hofstede, Hofstede, & Minkov, 2010). The first objective of the research is to understand the effect of cultural aspects on the relationship between technostress and strain. The second objective is to compare the collected data of different countries and attempt to identify differences between nations. Together, this allows us to understand the strength of the relationship between cultural aspects and technostress, and sheds light on whether there are differences between nations.

This paper contains seven sections. The next section will provide a theoretical background in the area of technostress, job burnout, and culture. This section also discusses several cultural frameworks and its corresponding link towards technostress and ICTs. The third section outlines the hypothesis development, whereas section four includes the data collection methodology used for validating the hypotheses. The results of the analyses are shown in section five, followed by (section 6) a discussion regarding the contribution of the research to existing literature, practical implications, limitations, and highlighting areas for future research. Last but not least, the paper closes with a conclusion.

2. Theoretical Background

The theoretical framework provides a proper understanding of the current literature and determines areas for follow-up research. The framework also allows the reader to better understand the developed arguments and choices made later in the paper. This section discusses the research approach and implementation, and the corresponding results and objectives for follow-up research.

2.1 Research approach and implementation

The aim of developing the theoretical framework is to identify the limits of prior studies and explore the relevant area(s) for future research (e.g., how variables might differ under specific circumstances). After selecting the technostress subject, the OU recommended four main articles about technostress as a starting point for the literature review (Ayyagari, Grover, & Purvis, 2011; Taradarf, Ragu-Nathan, & Tu, 2011; Tarafdar et al., 2015; Tarafdar, Cooper, & Stich, 2019). A review of these articles indicated that the effects of 'individual and organizational factors' and 'relationships within organizations' remain an understudied area in the technostress literature. Via the Open University's library access was granted to several EBSCO databases to retrieve relevant articles that indicate areas for follow-up research. The first search query included *techno* AND *stress*, specifically in the abstracts of peer-reviewed articles. The query resulted in about 300 articles. Scanning through the articles shed light on an interesting area, namely the relationship between culture and technostress. Notably, the articles of Ma and Turel (2018) and Srivastava, Chandra, and Shirish (2015) explore the effects of cultural differences in technostress formation and express the need for further cross-culture technostress research.

The use of a combination of literature search techniques resulted in more relevant articles. First, a combination of search queries regarding technostress, IS, and (cross)-culture provides about 15 relevant articles. Next, the backward and forward search technique has been applied, which retrieved 20 additional articles. Appendix 1 provides a detailed overview of the literature search protocol and results per technique. Altogether, the literature search retrieved about 40 to 50 relevant articles for this study. Some of them are related to prior technostress research, whereas others refer to possible links between culture and technostress.

2.2 Technostress

The technostress phenomenon was introduced in the IS literature around the 80s and 90s. Technostress is the stress that individuals experience due to the inability to cope with the introduction of new technology, technology-related changes, and technology in general in a healthy manner (Ragu-Nathan et al., 2008; Tarafdar et al., 2015). A lot of researchers focussed on stress; however, research on the impact of stress caused by ICTs remains an understudied area and should receive more attention (Ayyagari, Grover, & Purvis, 2011; Ragu-Nathan et al., 2008; Tarafdar et al., 2007). A study in 2005 indicated that employees spend about 28% of their workday on dealing with IT-related interruptions (D'Arcy et al., 2014). Such interruptions could result in a loss of time/productivity, translating into high costs for companies. This shows that research in the area of technostress is becoming more important and valuable, allowing organizations to define strategies for dealing with technostress. However, there is no standard solution to technostress because how people react to stressful situations depends on personality traits and situational traits that influence a person's reaction to stress (Krishnan, 2017; Khedhaouria & Cucchi, 2019).

When taking a closer look at technostress in general, three main concepts can be recognized: (1) The creators of technostress, which are the conditions that lead to the creation of technostress. (2) The strain/outcome, which refers to the way individuals respond to experienced stress. (3) Situational variables are external variables that can influence the level of stress individuals experience. These concepts are recognizable in Lazarus' Transaction-based Theory of stress (Lazarus & Folkman, 1984). This theory describes stress as a phenomenon that consists of a condition that creates stress, the response of the stress receiver, and an influential condition that either increases or decreases the level of stress (Tarafdar et al., 2015). Also, Lazarus' and Folkman's Transactional Model of Stress and Coping (TMSC) explains that stress is generated through a process of personal interpretations and feelings, empowered by factors that create stress and the availability of coping resources (Ma & Turel, 2018; Srivastava, Chandra, & Shirish, 2015).

IS literature on technostress distinguishes five typical causes that create technostress (D'Arcy et al., 2014; Tarafdar, Tu, & Ragu-Nathan, 2007). *Techno-Complexity* refers to technostress that makes users feel inadequate to work with ICTs and forced to spend time learning to work with new or changed ICTs. *Techno-Insecurity* occurs when employees fear job loss due to newly introduced ICTs or colleagues that have a better understanding of ICTs. *Techno-Invasion* refers to the constant connectivity and potential of being reachable anytime and anywhere, blurring the barriers between personal life and work. *Techno-Overload* originates from situations where employees feel the need to work more or faster due to ICTs. *Techno-Uncertainty* occurs when employees feel uncertain due to the continuous changes in ICTs.

Not only technostress creators are essential to study; moreover, various researchers emphasize the importance of studying its adverse effects on people (D'Arcye et al., 2014; Ragu-Nathan et al., 2008). For instance, it can lead to adverse physical and psychological effects or a decrease in job satisfaction/productivity, and a loss of organizational commitment (D'Arcy et al., 2014; Gaudioso, Turel, & Galimberti, 2017; Tarafdar, Tu, & Ragu-Nathan, 2007). Furthermore, there is an increase in work overload and work-home conflict. (Ragu-Nathan et al., 2008; Wang, Shu, & Tu, 2008). Another negative outcome is job burnout, which is a response to technostress characterized by chronic stress on the job (Gaudioso, Turel, & Galimberti, 2017; Khedhaouria & Cucchi, 2019; Srivastava, Chandra, & Shirish, 2015).

The TMSC also indicates that the way how individuals experience their environment can act as a possible creator of stress or influence the translation into positive and negative outcomes for individuals and organizations (Lazarus & Folkman, 1984; Ma & Turel, 2018). In recent literature, Srivastava, Chandra, and Shirish (2015) indicated that the personality traits of openness to experience and conscientiousness have a moderating effect on the relationship between technostress creators and job engagement, whereas, openness to experience and extraversion moderate the relationship with job burnout. Furthermore, social influences can impact the adoption of technology, depending on the type of involvement: mandatorily or voluntarily (Azam & Quaddus, 2013). From another perspective, Ayyagari, Grover, and Purvis (2011) emphasize that technological characteristics can influence the level of stress perceived by end-users. The TMSC refers to such factors as environmental or situational variables that could influence the level of stress.

2.3 Culture and ICTs

Culture is a broad, complex, and extensively researched subject. In general, culture is referred to as a combination of behavioral patterns, beliefs, norms, and values that characterize a specific group of people or even countries (Azam & Quaddus, 2013; Kaba & Osei-Bryson, 2013).

Gajendran and Brewer (2007) state that most researchers acknowledge that culture can be viewed based on three levels. The first level is the essence of what defines the applicable culture (assumptions-level), the second level refers to the values in which they believe (value-level), and the last level refers to the value expressed in situations (behavioral-level). People live and work in environments that are characterized by one or more cultures. Moreover, "*culture is a constraint for individuals and organizations that limits the nature and scope of their actions"* (Kaba & Osei-Bryson, 2013, p. 443). From their surroundings, people adopt behavioral patterns, beliefs, and values, which shape how people behave (Ma & Turel, 2018). According to Erumban and de Jong (2006), there are variations in individual or organizational needs and behavior within any culture. For example, culture influences the adoption of technology, the level of acceptance, and how people use it (Azam & Quaddus, 2013). This indicates that there is a possibility that cultures differ in their response towards a specific circumstance – for instance, a circumstance like technostress.

In the literature, the spectrum of culture has been conceptualized in various ways and at multiple levels (individual, organizational, or national level). For instance, the cultural framework of Hall conceptualizes culture based on high-context (e.g., more than words is need for transmitting a message) and low-context cultures (e.g., messages are transmitted explicitly in writing or orally) that differentiate based on several factors, such as time, location, and body language (Kaba & Osei-Bryson, 2013; Sørnes et al., 2004). Another framework comes from Schwartz, who has identified seven dimensions that explain cross-culture differences, mostly referring to the individual level (Bond et al., 2004; Erumban & de Jong, 2006). One of the dominant cultural frameworks is the National Culture Framework of Hofstede, which approaches cultural differences by addressing six dimensions of national culture (Hofstede, Hofstede, & Minkov, 2010; Ma & Turel, 2018). This model distinguishes the dimensions of Power Distance Index (PDI), Individualism vs. Collectivism (IDV), Masculinity vs. Femininity (MAS), Uncertainty Avoidance Index (UAI), Long-term Orientation vs. Short-term Normative Orientation (LTO), and Indulgence vs. Restraint (IVR).

This research adopts the framework of National Culture from Hofstede to investigate whether cultural dimensions influence the transformation of the stressor into the strain. Knowing that technostress is often researched at the individual-level, it would be interesting to determine whether there are cross-culture organizational differences (Ma & Turel, 2018). The framework of Hofstede allows for determining the cross-cultural difference and includes variables related to organizational and social processes (Erumban & de Jong, 2006; Kaba & Osei-Bryson, 2013). Also, the framework proved to be useful and stable in various studies and disciplines (Kaba & Osei-Bryson, 2013; Mooij & Hofstede, 2011; Sørnes et al., 2004). Thereby, in IS cross-culture literature, the six cultural dimensions are widely used and recognized as a whole and separately. Furthermore, Hofstede's framework has shown that the way people interact with their environment is influenced by differences in beliefs, norms, and values (Erumban & de Jong, 2006; Hofstede, Hofstede, & Minkov, 2010). Therefore, it would be useful to determine how such differences possibly translate into the experience of technostress and its influence on the strain.

As mentioned before, the Hofstede Framework discusses six different dimensions. First of all, the *Power Distance Index* (PDI) refers to the degree of inequality in the distribution of power in a country. The dimension of *Individualism vs. Collectivism* (IDV) is concerned with whether people look after group belongings or prefer personal and family belongings. *Masculinity vs. Feminity* (MAS) defines the contradiction between a preference for ambition, achievements, and reward for success against focussing on social relationships and achieving consensus and equality. The *Uncertainty Avoidance Index* (UAI) reflects the degree to which people feel uncomfortable with uncertainty and

ambiguity in a society. The dimension of *Long-term Orientation vs. Short-term Normative Orientation* (LTO) is the extent to which cultures value their traditions and are open to change and new ideas. The last dimension, *Indulgence vs. Restraint* (IVR)*,* refers to how much a society is open for free gratification of natural and basic aspects, compared to a society regulated by strict social norms. (Erumban & de Jong, 2006; Hofstede, Hofstede, & Minkov, 2010; Kaba & Osei-Bryson, 2013; Mooij & Hofstede, 2011). This research will not try to validate the Hofstede framework but utilize the framework as a cultural taxonomy that could influence the relationship between technostress and technostress outcomes.

3. Hypothesis Development

The research model utilizes the TMSC as a theoretical framework for explaining the effect of cultural aspects on the relationship between the stressor and the strain. This study conceptualizes the cultural dimensions as situational traits that moderate the relationship between technostress and the perceived strain/outcome. The TMSC indicates that an individual's disposition (e.g., individual characteristics or personality traits) can act as a creator or regulator of stress (D'Arcy et al., 2014; Ma & Turel, 2018). Different people can experience different outcomes, even though a standard level of IT is maintained. This suggests that individual and environmental characteristics can influence the level of stress experienced and possibly the outcome of stress. Therefore, this paper argues that cultural dimensions can influence the outcome of stress.

In this study, culture is referred to as the dimensions of the Hofstede Framework. As mentioned before, there are six different dimensions of national culture; however, this research model will only focus on three of them: power distance, individualism, and indulgence. The first reason to do so is that various researchers have used one or more of these dimensions in their ICT-related studies. For instance, Azam and Quaddus (2013) have found statistical support that power distance and individualism influences the adoption of ICTs. Whereas, Mahomed, McGrath, and Yuh (2017) provide evidence that the dimension of indulgence influences the use and way of working with ICTs. Recent research by Ma and Turel (2018) indicated that power distance could be theoretically linked to stress formation processes. The second reason is that including all six dimensions increases the possibility of generating a large survey, which has an impact on the sample size and could result in a lower response rate (Hair et al., 2017; Saunders, Lewis, & Thornhill, 2016). The third reason is related to the values of the dimensions of the countries involved in this study (Germany, Romania, and The Netherlands). Some dimensions seem to be more suitable for investigation than others; see figure 3 (Hofstede, 2019). The country comparison of Hofstede's model indicates that long term orientation and uncertainty avoidance show a relatively smaller difference between the three countries (less than 40 points difference between the highest and lowest value in the applicable dimension). Whereas, power distance, individualism, indulgence, and masculinity show a difference of more than 40 points between the countries. Focussing on these dimensions could increase the likelihood of finding differences in the outcome of the survey. Moreover, there is a possibility to determine the presence of a moderating effect by one of the dimensions because the Hofstede Model indicates large differences between the selected countries. Originally the intention was to include the masculinity dimension in this research. However, after the pilot-survey, the masculinity questions have been taken out of the research on request of the sample organization. Therefore, the focus of this research will be on power distance, individualism, and indulgence.

Tarafdar, Tu, and Ragu-Nathan (2007) distinguish five typical causes that create technostress; however, this research is not interested in the individual sub-dimensions associated with technostress, but in technostress as a whole. The reason for this is that the focus will be on the impact of cultural aspects on a specific outcome of technostress rather than determining whether a cultural dimension influences a specific technostress creator. Although ICTs contribute towards increasing the productivity and effectiveness of people, it also contributes to generating technostress, which can have adverse job outcomes (D'Arcy et al., 2014; Khedhaouria & Cucchi, 2019; Tarafdar, Tu, & Ragu-Nathan, 2007). Without discounting the importance of other adverse job outcomes, this research focuses specifically on job burnout. The main reason for focussing on this specific aspect is that in various technostress articles, researchers have found evidence for

technostress being a generator of job burnout and decreasing motivation (Ayyagari, Grover, & Purvis, 2011; Khedhaouria & Cucchi, 2019; Srivastava, Chandra, & Shirish, 2015). To increase the possibility of contributing to existing IS literature, the decision was made to extend the research of an already well-researched area, namely the relationship between technostress and job burnout.

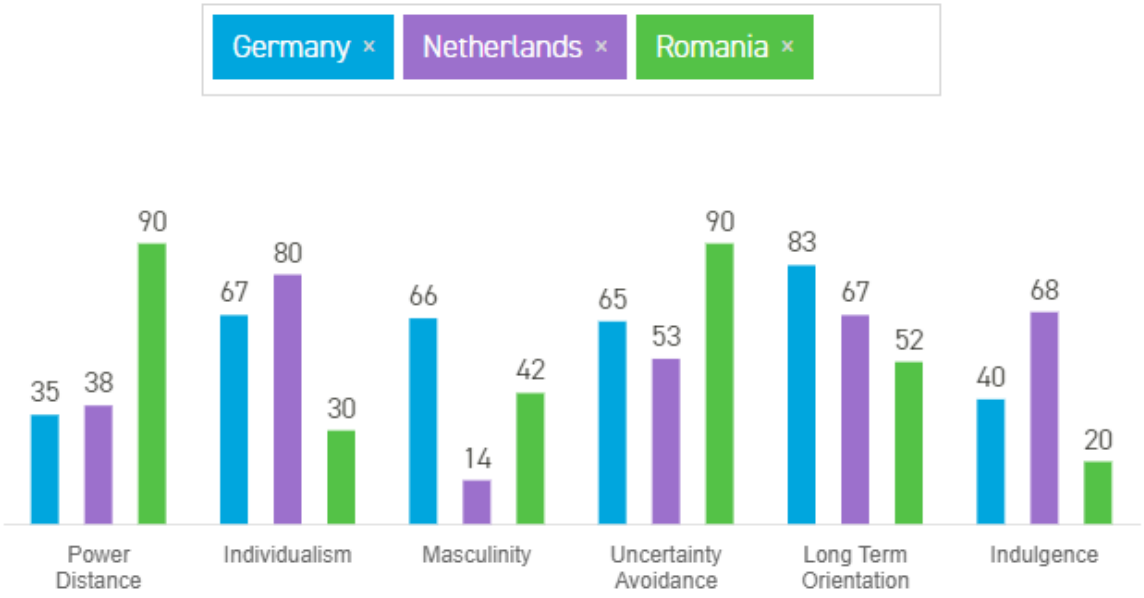


Figure 3, Hofstede's values of the individual dimensions of the selected countries (Hofstede, 2019).

Job burnout is a psychological syndrome characterized by emotional exhaustion and depersonalization as a result of chronic stress and a lack of personal accomplishments (Bakker et al., 2006; Khedhaouria & Cucchi, 2019). According to Saduwa, Popoola, and Olalude, 2013), job burnout occurs when people feel overwhelmed and unable to adapt to changes and meet constant demands. Not only individuals experience the negative outcome of job burnout, but also organizations have to cope with it (Khedhaouria & Cucchi, 2019). Previous research regarding technostress and job burnout indicated that technostress significantly contributes to job burnout. Research among librarians in Nigeria showed that the higher the level of technostress, the higher the chance of job burnout and vice-versa (Popoola & Olalude, 2013). Furthermore, Ayyagari, Grover, and Purvis (2011) suggest that IT contributes to job burnout symptoms due to the potential of being reachable anytime and anywhere. Khedhaouria and Cucchi (2019) and Srivastava, Chandra, and Shirish (2015) indicated that personality traits influence the way people react to technostress creators and cope with job burnout. For instance, research showed that the degree of openness to experience of individuals has an impact on the level of technostress and job burnout (Srivastava, Chandra, and Shirish 2015). Another example is that an individual's experience of job burnout in technostress situations relates to techno-invasion and techno-overload (Khedhaouria & Cucchi, 2019). Altogether, this provides sufficient evidence to assume that there is a relationship between the level of technostress and the outcome of job burnout. Before considering cultural dimensions that moderate this relationship, it is important to check on the existence of the direct relationship, which leads to the following hypothesis:

H1: Technostress positively influences job burnout.

The dimension of power distance reveals the degree to which a culture accepts the inequality in the distribution of power (Hofstede & Minkov, 2010). People in low power distance areas feel that they have more resources to address when IT-related issues occur rather than accumulating stress (Ma & Turel, 2018). Whereas, people in high power distance areas tend to be uncomfortable with addressing IT-related issues or questions to their supervisors and try to deal with the issues themselves (Hofstede, 2010). For example, Peterson et al. (1995) emphasize that role overload is more likely to occur to managers in high power distance countries. Moreover, Ma and Turel (2018) strengthen this assumption by indicating that job overload increases when employees experience a high level of power distance. Their research showed that employees exposed to high power distance also perceive an increase in the level of technostress. Second, power distance showed a moderating effect on the extent use of IT for work and its relationship with technostress. This outcome is supported by Krishnan (2017), who found statistical support for his arguments that employees exposed to high power distance, perceive more technostress than employees that experience low power distance. Consequently, this could mean that the level of technostress depends on whether an individual is exposed to a certain power distance level. Thereby, the country comparison of Hofstede (2019) indicated large differences in power distance values between the selected countries. Hence:

H2: The relationship between the level of technostress and job burn-out increases when people experience a higher degree of power distance.

Indulgence refers to a society characterized by a human drive to enjoy life, value personal well-being, and the freedom to express feelings and opinions (Hofstede & Minkov, 2010). This is the opposite of restraint in which society experiences strict social norms, and people care less about freedom and leisure. According to Mahomed, McGrath, and Yuh (2017), people in high indulgence cultures are more active on the internet and e-mail, than people in more restraint cultures. Their study indicated a positive influence of indulgence on the ease of use of e-mail, allowing end-users to deal better with e-mailing. Research among Chinese and Spanish university teachers showed that the cultural dimension of indulgence is an important factor in teachers' perception of subjective norms (Huang et al., 2019), which leads to a higher intention to use technologies. Furthermore, research shows that indulgence has a contributing role when it comes to causing a burnout (Grover et al., 2018; Saboori & Pishghadam, 2016). Saboori and Pishghadam (2016) show that people in low indulgence cultures experience less happiness and more depressions, whereas people in high indulgence cultures experience more stress and anxiety. Both situations have characteristics that are typical of a burnout (Bakker et al., 2006), indicating that whether or not cultures are indulgent, the possibility of getting a burnout is roughly the same. Nevertheless, several researchers have pointed out that people experiencing a higher degree of indulgence can deal better with the internet and e-mailing and have the intention to use ICTs, which could lead to a lower level of technostress. This would imply that:

H3: The dimension of indulgence negatively moderates the relationship between technostress and job burnout.

The dimension of individualism refers to the situation in which people prefer personal goals and family aspects over society and cohesive groups (Hofstede & Minkov, 2010). This type of individual prefers 'I' rather than 'we' and need to manage their time more tightly because they need to execute tasks sequentially or simultaneously by themselves (Sørnes et al., 2004). However, research by Krishnan (2017) found no support for the hypothesis that people with high individualism

perceive technostress creators more negatively. In contrast, Azam and Quaddus (2013) research showed that in-group collectivism is positively related to enhancing the adoption and use of ICTs. Their research indicates that the adoption and use of ICTs are better to be done in a collective manner rather than in an individual manner. Sørnes et al. (2004) highlight that the learning process can become very efficient and effective in collectivistic environments because people do not need to reinvent themselves. Hence, the same level of ICTs in work will likely produce a lower level of technostress when an employee is characterized by low individualism (collectivism):

H4: The dimension of individualism negatively moderates the relationship between technostress and job burn-out.

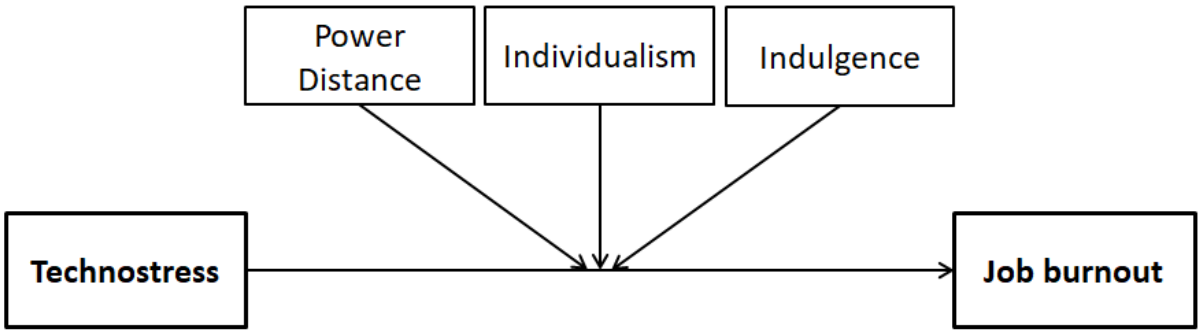


Figure 4, the structural model

4. Research Methodology

This section introduces the data collection method and the measures for each of the formulated constructs.

4.1. Data collection

Most empirical studies in the area of technostress have used a quantitative approach to collect data through survey methods (Tarafdar, Cooper, & Stich, 2019). This research applied a mono-method quantitative design. This means that there is only a single data collection method used to fulfill the objectives of understanding the strength of the relationship between cultural dimensions and technostress, and the differences between nations. Data collection took place at a multinational manufacturer operating in the printing industry. The company has seven sites around the globe, of which The Netherlands (± 1.800 employees), Germany (± 900 employees), and Romania (± 200 employees) are the biggest three. The data collection occurred through a web-based questionnaire deployed via LimeSurvey (the Open University's online survey tool). The survey contained five main chapters: the introduction, the control variables section, technostress in general, the moderators (cultural dimensions), and job burnout. The questionnaire has been created by adapting measures from prior studies to operationalize the constructs. Appendix B provides an overview of the operationalization of the research constructs and related control variables, including the translated versions in Dutch and German.

Before spreading the survey, a small group of employees from all three nations participated in a pilot questionnaire. Based on their experience and feedback, the survey was adjusted to ensure that the final web-based survey is understandable and avoids ambiguity. Furthermore, during this pilot, the survey has also been translated into Dutch and German by applying the technique of back-translation for questionnaires (Usenier, 1998). Due to the limited number of potential respondents in Romania, the decision was not to translate the questionnaire into Romanian. Furthermore, within the applicable company, the main language is English, meaning that an English survey should already be sufficient for all employees.

The Data Protection Officer and Human Resource department granted permission to distribute the survey via mail. Due to the outbreak of Covid-19 (also known as the coronavirus pandemic), only distribution via mail was allowed. Other means of survey distribution were not allowed. The initial proposal was to conduct a company-wide survey in all three entities to enhance the capturing of the expected cultural differences. However, the impact of the virus and related company measures have affected the initially proposed sample size. Discussions with each entity eventually resulted in a useful sample for this research.

- *Germany* – Due to Germany's very strict Corona measures, the HR department and Works Council only allowed direct authors' colleagues to participate in the survey. This resulted in 57 employees from various departments, which is only 6,3% of all employees in Germany.
- *Romania* – There were no restrictions in Romania, allowing for a company-wide survey that involved all 190 employees.
- *The Netherlands* – In consultation with HR, only 20% of the company has been selected. By using random selection, employees in the four overarching departments were selected (Business Units, Manufacturing and Logistics (M&L), Research and Development (R&D), and supporting functions). In The Netherlands, 439 employees received an invitation to participate in the questionnaire.

Overall, a total of 686 employees received a survey invitation. The e-mail contained a brief description of the study, explaining the management-approved survey, ensured anonymity when participating, and asked the participants to respond within three weeks voluntarily. After two weeks, Romania and The Netherlands had sufficient response rates; however, the German entity (19 responses in two weeks) needed some extra attention. A reminder was sent to bolster the response rate in Germany. Within three weeks (15 workdays), the survey was officially closed for all entities.

4.2. Measures

The feedback and translation technique have led to a final survey with 45 measures, of which 35 relate to the three main constructs. Appendix B provides an overview of the operationalization of the research constructs. Each main construct includes a set of statements to whom participants can indicate their level of agreement by using a five-point Likert scale. The scale ranges from (1) “strongly agree” to (5) “Strongly disagree”. The constructs of technostress and job burnout both consists of 10 measures, allowing to determine whether there is a relationship between the two, as indicated by previous studies (Khedhaouria & Cucchi, 2019; Srivastava, Chandra, & Shirish, 2015).

The questions related to technostress were adapted from the research of Ragu-Nathan et al. (2008) and Tarafdar et al. (2007), which are widely used in the technostress IS literature. It is important to note that many previous studies approach technostress as a second-order formative construct. Initially, the aim was to do the same for this study. However, due to a mistake in the survey preparation and deployment, the actual survey only contained only ten of the 25 relevant questions. By running the technostress measures from a formative perspective proved that nine out of ten measures could remain in the model. Unfortunately, this is not entirely valid for this research because each sub-construct would only have two measures. This led to the decision to proceed with the measurement of technostress from a reflective angle even though this was not the plan from the start.

Previous research regarding technostress and job burnout indicated that there is a relationship between the two constructs, and, therefore, this study adopted those measures for the construct of job burnout (Ayyagar & Purvis, 2011; Gaudioso et al., 2017; Khedhaouria & Cucchi, 2019; Srivastava, 2015). These studies measured the job burnout construct from a reflective angle. Furthermore, the three cultural dimensions are reflective constructs that each contain five measures to indicate whether or not they influence the relationship (García-Peñalvo, 2018; Krishnan, 2017; Ma and Turel, 2019; and Mahomed, McGrath, and Yuh, 2017).

The remaining ten measures are control variables. These variables help to determine whether dependent variables are influenced by something outside the independent variable. The survey captured the basic demographic variables of age, gender, years in current position, and years of working experience to control for unobserved effects (Marchiori, Mainardes, & Rodgrigues, 2019). Besides that, the measures of department, function, workplace location, and working hours have been used for control and descriptive purposes. Workplace location is the essential control variable because this study aims to identify differences between nations.

5. Results

This section provides the results of the analyses of the collected data by giving a respondents summary, executing tests for reliability and validity, and testing the formulated hypotheses.

5.1. Respondent summary

A preliminary analysis of the results indicated that from the 343 opened surveys, a total of 293 participants fully completed the survey. In LimeSurvey, each question was mandatory; however, six responses contained missing data, and a single person gave everything the same score (also known as a flatliner). After eliminating these responses, 286 usable responses remained, representing an overall response rate of 41,7%. Due to the small sample size in Germany, there were only 19 usable responses within ten workdays. After sending a reminder in Germany, the number of responses increased to 26. Usually, a non-response bias test (early vs. late response) would be conducted; however, the sample is too small to conduct a proper non-response bias test. Table 1 contains a summary of the preliminary analysis, whereas Table 2 shows an overview of the response rates per location.

Table 1, summary of preliminary analysis

	Amount
Opened Surveys	343
Did not proceed	41
Partially completed	9
Missing data	6
Dublicates	0
Flatliners	1 -
Amount of usable responses	**286**

Table 2, response rate of all locations

	Germany	Romania	The Netherlands	Total
Distributed amount	57	190	439	686
Usable responses	26	63	197	286
Response rate	45,6%	33,2%	44,9%	41,7%

The sample demographics indicate that 23,1% of the respondents were female, and 76,9% were male. Furthermore, 85% of the respondents are working in an operational function, compared to 15% working in a management function. Most respondents had an age between 36 and 65, with an average age of 46,4 years. Interestingly, only very few respondents work within the business unit, whereas the remaining departments provide roughly the same amount of respondents. Appendix C provides a full overview of the output for each demographic variable.

Table 3, sample demographics

	Germany	Romania	The Netherlands	Total	Percentage
Age					
Below 26	1	13	2	16	5,6%
26 to 35	2	14	22	38	13,3%
36 to 45	4	27	35	66	23,1%
46 to 55	13	9	76	98	34,2%
56 to 65	5	0	60	65	22,7%
Above 65	1	0	2	3	1,1%

	Germany	Romania	The Netherlands	Total	Percentage
Department					
Business Unit (BU)	4	1	7	12	4,2%
Manufacturing & Logistics (M&L)	5	0	86	91	31,8%
Research & Development (R&D)	2	54	30	86	30,1%
Supporting Functions (SF)	15	8	74	97	33,9%
Function					
Management function	7	8	28	43	15,0%
Operational function	19	55	169	243	85,0%
Gender					
Female	9	16	41	66	23,1%
Male	17	47	156	220	76,9%

The essential demographic variable is workplace location because this research attempts to identify differences between nations. Therefore, the table below provides an overview of the mean and standard deviation (STDEV) for each construct per county. The constructs of job burnout and technostress show smaller differences between the countries compared to the cultural dimensions.

Table 4, sample mean and standard deviation (STDEV) per construct and country

Country	Technostress	Cultural Dimensions			Job Burnout
		Indulgence	Individualism	Power Distance	
Germany	3,29	2,38	2,62	3,78	3,50
Netherlands, The	3,36	2,19	2,67	3,91	3,59
Romania	3,37	1,97	2,49	3,69	3,59
Overall Mean	3,35	2,16	2,63	3,85	3,58
Germany	1,16	1,04	0,74	0,96	0,89
Netherlands, The	1,21	1,06	0,97	0,98	1,03
Romania	1,09	0,85	0,91	0,97	0,89
Overall STDEV	1,18	1,02	0,95	0,98	0,99

5.2. Reliability and Validity

The reliability and validity of the reflective constructs have been assessed by applying several methods. Cronbach's alpha and composite reliability tested the internal consistency reliability. Hair et al. (2017) suggested that values above 0.6 are acceptable for exploratory work. All constructs in the study showed a sufficient value, except for the cultural dimension of indulgence and the technostress construct. After omitting several measures (TS01, TS02, TS04, TS06, TS09, IND01, IND02, and IND04), the values of Cronbach's alpha and composite reliability became acceptable for this study. Furthermore, the (outer) loadings, indicator reliability, and average variance extracted (AVE) tested the model's convergent validity. According to Hair et al. (2017), outer loadings should have a value above 0.6, whereas the AVE requires a value above 0.5 and the indicator reliability above 0.4. For the constructs of individualism, power distance, and job burnout, there were several outers loadings below the threshold of 0.6, or the AVE was below 0.5 (Hair et al., 2017). Therefore, measures IDV03, IDV04, JB08, JB09, and PDI05 needed to be omitted from the measurement model. Table 5 provides a full overview of the results for the convergent validity and internal consistency reliability. Appendix D provides more details about the reason for omitting the measures to improve the constructs' reliability and validity.

Table 5, summary of convergent validity and internal consistency reliability

Latent Variable	Indicators	Convergent Validity			Internal Consistency Reliability	
		Loadings	Indicator reliability	AVE	Composite Reliability	Cronbach's alpha
		>0.60	>0.40	>0.50	>0.70	>0.60
Technostress	TS03	0.7766	0.6034	0.532	0.850	0.780
	TS05	0.6631	0.4394			
	TS07	0.7245	0.5249			
	TS08	0.8019	0.6430			
	TS10	0.6673	0.4453			
Individual-ism	IDV01	0.7139	0.5096	0.548	0.785	0.600
	IDV02	0.7637	0.5852			
	IDV05	0.7431	0.5508			
Indulgence	IND03	0.9089	0.8266	0.717	0.834	0.612
	IND04	0.7793	0.6067			
Power Distance	PDI01	0.7997	0.6394	0.509	0.805	0.692
	PDI02	0.6400	0.4090			
	PDI03	0.7466	0.5581			
	PDI04	0.6562	0.4304			
Job Burnout	JB01	0.6374	0.4086	0.621	0.928	0.910
	JB02	0.6988	0.4878			
	JB03	0.8088	0.6516			
	JB04	0.8255	0.6801			
	JB05	0.8400	0.7049			
	JB06	0.8938	0.8001			
	JB07	0.8687	0.7568			
	JB10	0.6910	0.4771			

Furthermore, to ensure that a construct/measure does not represent other constructs/measures, the cross-loadings (see table 6) and the Heterotrait-Monotrait Ratio of Correlations (HTMT; see table 7) test the construct's discriminant validity. Cross-loading indicates validity *" when each measurement item correlates weakly with all other constructs except for the one to which it is theoretically associated"* (Gefen & Straub, 2005, p. 92). The HTMT calculation assesses the geometric-mean correlation between the measurement items across the other constructs relative to the geometric-mean correlation between the measurement items in the same construct. Both tables show sufficient values, meaning that the HTMT values are nicely below 0.9, and the highest cross-loadings values of each measure are related to the applicable constructs (Hair et al., 2017).

Table 6, Cross-Loadings analysis

	Individualism	Indulgence	Job Burnout	Power Distance	Technostress
IDV1	0,7139	0,1672	-0,072	0,0581	-0,0796
IDV2	0,7637	0,1714	-0,0743	0,0933	-0,1414
IDV5	0,7431	0,2418	-0,0989	0,0641	-0,0728
IND3	0,2536	0,9089	-0,4438	-0,0356	-0,2679
IND4	0,1938	0,7793	-0,2952	0,0312	-0,1824
JB1	-0,1148	-0,1996	0,6374	0,0906	0,3365
JB2	-0,0547	-0,2882	0,6988	0,1493	0,3126
JB3	-0,0224	-0,3394	0,8088	0,1801	0,4474
JB4	-0,0717	-0,3902	0,8255	0,0620	0,3214
JB5	-0,0806	-0,4148	0,8400	0,1490	0,4004
JB6	-0,1229	-0,3809	0,8938	0,1920	0,4027
JB7	-0,1584	-0,4117	0,8687	0,1524	0,3557
JB10	-0,0906	-0,3554	0,6910	0,1179	0,4001
PD1	0,0852	-0,0185	0,1444	0,7997	0,1269
PD2	0,0619	0,0347	0,0787	0,6400	0,1794

	Individualism	Indulgence	Job Burnout	Power Distance	Technostress
PD3	0,0942	-0,0192	0,1587	0,7466	0,1456
PD4	0,0122	-0,0064	0,0943	0,6562	0,2012
TS03	-0,0961	-0,1974	0,4126	0,0836	0,7766
TS05	-0,0088	-0,1651	0,3105	0,2236	0,6631
TS07	-0,0652	-0,1433	0,2383	0,1037	0,7245
TS08	-0,1613	-0,2911	0,4178	0,1268	0,8019
TS10	-0,1136	-0,1597	0,2955	0,2820	0,6670

Table 7, Heterotrait-Monotrait Ratio of Correlations (HTMT)

Construct	Job burnout	Power distance	Individualism	Indulgence	Technostress
Job burnout					
Power distance	0.2045				
Individualism	0.1505	0.1351			
Indulgence	0.5727	0.0100	0.4206		
Technostress	0.5435	0.3224	0.1830	0.3664	

5.3. Hypotheses testing

To test the hypotheses, the Partial Least Squares Structural Equation Modeling Technique has been used (PLS-SEM). This technique can model the latent constructs in case of non-normality, and it is similar to a regression modeling technique, which can model both structural and measurement paths simultaneously (Chin & Todd, 1995; Hair et al., 2017). Before doing any further investigation of the hypotheses, an assessment for collinearity issues was done. The output of the assessment showed VIF-values that were nicely below the threshold of 5 (Hair et al., 2017; see appendix E). By taking into account the recommendations and experiences from prior studies (Chin & Todd, 1995; Hair et al., 2017), the assessment of the structural model took place in SmartPLS 2 and Adanco 2.1. Figure 5 provides an overview of the results of the bootstrap analysis of 5.000 samples.

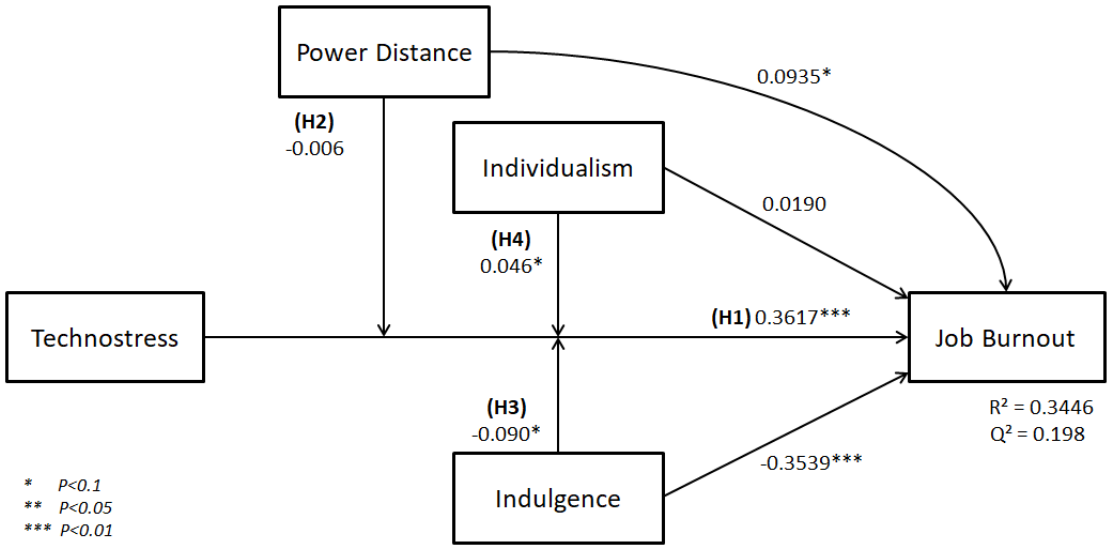


Figure 5, overview results structural model.

The first hypothesis is highly significant (t-value = 6.5083), indicating that technostress does increase job burnout. Hair et al. (2017) describe effect sizes (f^2 or q^2) of 0.02, 0.15, or 0.35 as respectively weak, moderate, and substantial. The coefficient of determination represents the variance explained by all exogenous latent variables, showing a moderate to weak coefficient (R^2 = 0.3446). Its related effect size for the technostress construct (f^2 = 0.1738) indicates a moderate effect on job burnout. From another perspective, the blindfolding procedure reveals that the PLS path

model has predictive relevance for job burnout (Q^2 = 0.198). The relative impact of the technostress construct's predictive relevance is small to moderate (q^2 = 0.0873). Compared to the other direct relationships, the technostress construct has the highest predictive impact. This implies that when technostress is included or excluded from the model, there is a subsequent increase/decrease in predictive power, meaning that technostress contributes to explaining a portion of the job burnout construct.

Table 8, direct relationships for hypothesis testing

Hypothesis	Relationship	Std Beta	Std Error	t-value	Decision	f^2	q^2
n/a	Individualism -> Job burnout	0.0190	0.0479	0.3963	Not supported	0.0005	-0.0012
n/a	Indulgence -> Job burnout	-0.3539	0.0600	-5.9034	Supported*	0.1663	0.0748
n/a	Power distance -> Job burnout	0.0935	0.0510	1.8321	Supported*	0.0125	0.0075
H1	Technostress -> Job burnout	0.3617	0.0546	6,6064	Supported***	0.1738	0.0873

***p<0.01, **p<0.05, *p<0.1

The remaining three hypotheses state that each of the three constructs moderates the relationship between technostress and job burnout. The product indicator approach tested the moderation variables in SmartPLS. This approach allows the product terms of the indicators to become part of the model, rather than doing a two-stage or orthogonalization approach (Hair et al., 2017). The moderation analysis results indicate that the hypothesis for power distance does not find support, whereas, indulgence and individualism do moderate the relationship between technostress and job burnout (p<0.1). Both hypotheses are not highly significant; however, Hair et al. (2017) state that for exploratory research, a p-value of 0.1 is generally accepted (Hair et al., 2017). Table 9 provides an overview of the moderation relationships for hypothesis testing.

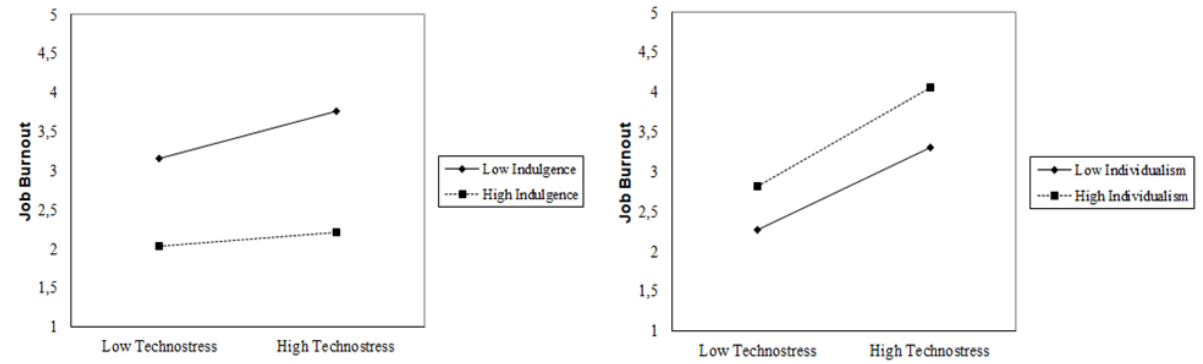
Table 9, moderation relationships for hypothesis testing

Hypo-thesis	Relationship	Std Beta	Std Error	t-value	Decision	f^2
H2	Technostress * Power Distance -> Job burnout	-0.006	0.035	0.126	Not supported	0.000
H3	Technostress * Indulgence -> Job burnout	-0.090	0.060	1.652	Supported*	0.038
H4	Technostress * Individualism -> Job burnout	0.046	0.030	1.757	Supported*	0.004

***p<0.01, **p<0.05, *p<0.1

For the dimension of indulgence, the moderating effect is barely significant. The results of running several bootstraps generate t-values that are sometimes above or below the threshold of 1.645 (p<0.1). Before accepting or rejecting the hypothesis, it is useful to understand the pattern of significant interactions between technostress and indulgence. Therefore, the interactions are plotted according to Aiken and West (1991) and Dawson (2014) standards. Figure 6a plots the slopes one standard deviation above and below the mean. This two-way interaction indicates negative moderation; however, it also visualizes that the effect is small, which is confirmed by the effect size (f^2 = 0.038). When the level of technostress increases, people with a low level of indulgence will experience a higher increase in job burnout than employees with high indulgence. The combination of a small effect size and barley significant relationship leads to a rejection of the hypothesis.

The results of the moderating effect of individualism show a significant value (p=0.083). In order to gain an understanding of the effect, interactions are plot in the same way as for indulgence. Figure 6b shows that when the level of technostress increases, the level of job burnout increases too; however, for people characterized by low individualism, the increase in technostress is smaller than for people characterized by high individualism. The small difference between the two slopes reflects in a very small effect size (f^2 = 0.004), leading to a rejection of the hypothesis despite the significant value (p<0.1).



A. Job burnout – high and low Technostress in the presence of high and low Indulgence.

B. Job burnout – high and low Technostress in the presence of high and low Individualism.

Figure 6, two-way unstandardized interaction analysis

5.4. Additional analysis

Besides the hypotheses, this research aims to identify differences between nations. As earlier indicated by figure 2, the Hofstede country data shows major differences among the countries for the dimensions of indulgence, individualism, and power distance. When analyzing the means for the cultural dimensions in each country and comparing this to the scores and graph of the Hofstede model, it becomes clear that the cultural differences are not really captured as outlined by Hofstede's framework. There are some differences within the individual cultural dimensions (see figure 7) but not as big as the Hofstede model. Moreover, multi-group analysis and parametric testing also did not provide any evidence for significant differences between the countries.

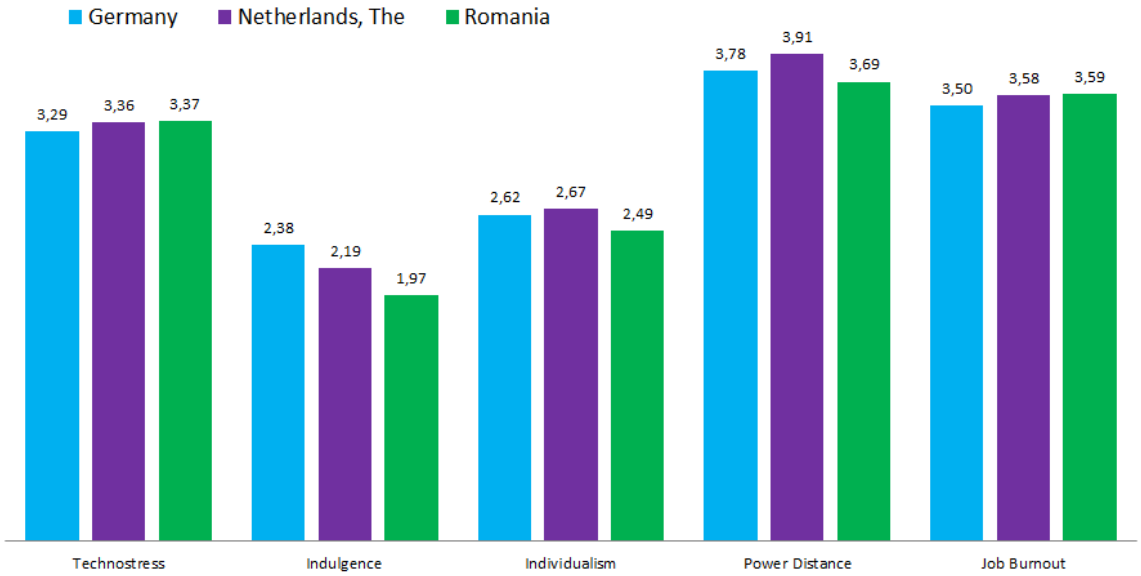


Figure 7, visualizing the sample means of the countries per dimension

Although not all moderating hypotheses are fully supported, and the expected cultural difference is different from Hofstede's framework, multi-group analysis can determine significant moderation effects within specific groups. For all control variables, a multi-group analysis (bootstrap sample of 5000) has been done, including parametric testing, to discover significant differences between groups. Appendix F provides an overview of all multi-group analysis and parametric tests for each demographic variable; however, table 10 summarizes the most interesting results.

Table 10, summary finding multi-group analysis

		Bootstrapping Results			Parametric Test	
Hypothesis	**Control Variable**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
H1	Department M&L	0.410	0.093	4.398***	0.239	1.583
	Department R&D	0.193	0.122	1.382		
H1	Department R&D	0.194	0.120	1.406	-0.336	2.367**
	Department Supporting Function	0.503	0.082	6.127***		
H1	Age Group - Below 36	0.166	0.139	1.041	-0.431	2.670***
	Age Group - 36 to 45	0.551	0.093	6.170***		
H1	Age Group - Below 36	0.161	0.143	1.014	-0.148	0.964
	Age Group - 46 to 55	0.296	0.084	3.507***		
H1	Age Group - Below 36	0.163	0.143	1.013	-0.366	2.067**
	Age Group – Above 55	0.506	0.111	4.596***		
H3	Department M&L	-0.019	0.086	0.497	-0.062	1.881*
	Department R&D	-0.111	0.097	2.056**		
H3	Work hours - Below 33	0.073	0.129	0.526	-0.285	1.809*
	Work hours - Above 40	-0.148	0.093	2.335**		
H3	Work Experience - Below 11	-0.105	0.118	1.745*	0.347	2.286**
	Work Experience - 11 to 20	0.087	0.099	1.429		
H3	Work Experience - 11 to 20	0.088	0.101	1.403	0.250	2.225**
	Work Experience - Above 20	-0.098	0.058	1.881*		
H4	Age Group - Below 36	-0.047	0.073	0.723	-0.265	2.686***
	Age Group - 36 to 45	0.076	0.068	3.145***		
H4	Age Group - 36 to 45	0.076	0.066	3.237***	0.153	2.015**
	Age Group - 46 to 55	0.050	0.045	1.327		
H4	Age Group - 36 to 45	0.076	0.067	3.187***	0.234	2.910***
	Age Group - Above 55	-0.009	0.047	0.455		

Knowing that the first hypothesis is highly significant, it is interesting to see that compared to other departments, specifically R&D employees, do not experience a positive relationship between technostress and job burnout. Moreover, parametric testing reveals that it is significantly different from employees in supporting functions (β= -0.336, $p<0.05$). The results also indicate that employees with age below 36 experience technostress significantly different from other ages. There is no evidence found for a positive relationship between technostress and job burnout for employees below the age of 36, whereas, for employees in higher ages, the relationship is highly significant.

When analyzing the moderators, mainly the control variables of age, department, work experience, and work hours provide some useful results. The cultural dimension of indulgence significantly moderates the relationships within specific groups. For example, people within R&D or employees that work more than 40 hours per week find support for a moderating effect of indulgence. Furthermore, the moderating effect of indulgence differs among employees with a certain amount of work experience. On the other side, the dimension of individualism only finds support for significant differences when comparing the age groups. Especially, employees in the age of 36 to 45 experience a moderating impact of individualism on the relationship between technostress and job burnout. Unfortunately, the dimension of power distance did not find support within specific groups.

The last additional analysis concerns the structural model's assessment by measuring the technostress construct from a formative angle. Even though this is not entirely valid, since the sub-constructs only have two measures each, it could provide some useful insights. Appendix G outlines the complete assessment of the validity and reliability as well as the hypotheses testing. The results are not very different from the ones outlined in paragraph 5.3. The first hypothesis is again highly significant with a moderate effect. Again, the power distance dimension again does not provide evidence for a moderating effect, whereas both cultural dimensions of indulgence and individualism find support in the model with a small effect size. However, in the formative measurement model, the support is more significant than in the reflective model. This implies that measuring technostress from a formative perspective could enhance the quality of the model and lead to more findings. Unfortunately, it is important to note that the formative measurement is not entirely valid for this research because each sub-construct would only have two measures. Nevertheless, it would be interesting to conduct the same study with the proper measures for measuring as a second-order formative construct, as it might lead to different outcomes.

6. Discussion & Recommendations

The following section discusses the results in more detail and elaborates on the implications, limitations, and recommendations for future research as well as the contribution to the current literature.

6.1. Discussion

This exploratory study provides insight into the impact of national culture dimensions on the relationship between technostress and job burnout. As expected, the relationship between technostress and job burnout is highly significant, just like in prior technostress research (Ayyagari, Grover, & Purvis, 2011; Khedhaouria & Cucchi, 2019; Srivastava, Chandra, & Shirish, 2015), and thus supporting the first hypothesis. Interestingly, employees in R&D did not have a positive relationship between technostress and job burnout and is significantly different from other departments. Earlier research already indicated that R&D employees are characterized by an approach of "learning by doing" and regularly explore new ICTs (Howells, 1995). This could be a possible explanation for the non-significant values of the direct relationship. Furthermore, the relationship between technostress and job burnout is highly significant in almost every control variable, except for employees with less than ten years of work experiences or an age below 36, which is in line with earlier findings (Marchiori, Mainardes, & Rodgrigues, 2019; Srivastava, Chandra, & Shirish, 2015).

Concerning the moderating hypotheses, the model does not find support for all of them. The dimension of power distance does not significantly moderate the relationship between technostress and job burnout. This finding contradicts previous research, suggesting that the dimension of power distance affects the level of perceived technostress (Krishnan, 2017). Even though Hofstede and Minkov (2010) showed different power distance levels for the three applicable countries, the additional analysis proved no major differences among the countries. This implies that the dimension of power distance does not capture the cultural difference as outlined by the Hofstede model.

The findings for the moderating effect of indulgence represent a small effect ($f^2 = 0.038$), indicating that indulgence moderates the relationship between technostress and job burnout ($\beta = -0.090$, $p<0.1$). Furthermore, the slope analysis confirms Pishghadam's (2016) outcome, who stated that people with a low indulgence are more likely to have a higher stress level. The model supports this because when technostress increases, job burnout is higher for people with low indulgence than those experiencing high indulgence. Despite the significant moderating effect, the hypothesis is not fully supported because the effect size is really small, implying that there is no major impact of indulgence on the relationship between technostress and job burnout. From another perspective, when comparing the countries to each other, only in The Netherlands ($\beta = -0.111$, $p<0.05$), there is a significant value. According to the Hofstede model, the outcome was also expected because the Netherlands has the highest value for indulgence compared to Germany and Romania (Hofstede & Minkov, 2010). This could explain why indulgence is significant in The Netherlands and not in other countries because they are more characterized by restraint. Nevertheless, despite this finding, the results indicate that also the dimension of indulgence did not fully capture the cultural difference. The additional analysis pointed out that Germany has the highest mean for indulgence, in contrast to Hofstede, who states that The Netherlands scores higher on indulgence.

The dimension of individualism found significant support; however, its effect was so small that it rejects the hypothesis ($f^2 = 0.004$). Nevertheless, the outcome tends to support the assumption of Krishnan (2017) that employees with high individualism are more likely to experience

higher technostress. The slope analysis shows that people with a collectivistic mindset (low individualism) experience lower technostress and thus experience a lower level of job burnout. This implies that there is a negatively moderating effect caused by individualism. Furthermore, only for the dimension of individualism, the cultural difference seems to be captured because the results show that the Dutch employees have the highest mean for individualism, followed by Germany and Romania, respectively. This is in line with the outcomes of Hofstede's model. Despite the similarity, the multi-group analysis did not provide evidence for significant differences between countries.

6.2. Theoretical and practical implications

This study contributes to cross-culture, technostress, and job burnout literature in several ways. While there is only limited literature on the impact of cultural dimensions on technostress and job burnout, this study contributes to the literature by exploring the moderating effect of indulgence and individualism, which, to my knowledge, have not been explored before. The findings show that indulgence moderates the relationship between technostress and job burnout in The Netherlands. This shows support for some parts of the stress and comping model of Lazarus and Folkman (1984) because the findings indicate that external variables (cultural dimensions) can influence the level of stress individuals experience.

Most studies in technostress literature, measure the technostress construct from a second-order formative level; however, this study measured technostress as a reflective construct. Interestingly, the direct relationship between technostress and job burnout remained highly significant ($p<.01$), indicating that the technostress construct is well-developed and can be applied in research in multiple ways. Furthermore, the results of this study expand the known impact of control variables (e.g., age, education, and work experience) by indicating that specifically employees within R&D experience the impact of technostress on job burnout significantly different than others.

Given that organizations intend to reduce the level of technostress among employees (D'Arcy et al., 2014; Tarafdar et al., 2015), the findings can stimulate multinationals to take cultural dimensions into account while formulating a strategy. This study did not capture the cultural difference as outlined by the Hofstede model, which implies that it is not easy to isolate a particular part(s) of a culture. However, based on the additional analysis, there are clear differences between the values of the dimensions, which means that organizations should try to take culture into accounts when making strategies. From another perspective, the findings can help management to make better decisions when dealing with technostress in organizations. Thereby, the results show that there is not something like one size fits all because people in specific departments or functions react differently to technostress, cultural dimensions, and job burnout. For instance, employees within R&D tend to experience the impact of technostress differently in contrast to other departments. Another example comes from the functional level, as employees in operational functions experience higher technostress and job burnout than employees in management functions. Future research in such areas could provide useful insights for organizations that can help to create a more accurate plan to reduce technostress.

6.3. Limitations

Several limitations are worth mentioning. First of all, the fact that technostress was measured as a reflective construct might have negatively impacted the results. Adhering to prior research could have increased the possibility of finding (more) support for the moderating hypotheses because it is already a well-developed construct. Unfortunately, for this study, half of the

technostress measures were omitted to get a reliable and valid model. Running the ten measures from a formative perspective proved that almost all measures could remain in the model, but it was not entirely valid for this research because each sub-construct would only have two or fewer measures. Thereby, the additional analysis (see appendix G) did not provide different results. Measuring the technostress construct as a reflective construct could reduce the quality of the measurement because it does not focus on the underlying elements but the overall outcome.

Second, the collected data may be subject to biases because the sample is not entirely random, and data collection happened under unusual circumstances. Data collection took place during the lockdown period, due to the rapid outbreak of Covid-19. From March-20 till June-20, employees in all three countries were forced to work at home, rather than from their familiar office environment. This may have had an impact on the response rate as well as the answers given by employees. Future research could replicate this study under normal circumstances and provide insights regarding the impact of the Covid-19 situation on the current study and the level of job burnout. From another perspective, the outbreak of Covid-19 forced an adaption of the survey strategy, time-frame, and corresponding selection of the sample group. In order to achieve the highest possible response level, direct authors' colleagues received an invitation to participate in the survey voluntarily. Thereby, for employees in some departments, the invitation contained a short message from the management to encourage everybody to fill out the survey, which could lead to possible biased answers as people may feel pressure to participate.

Third, the study used the model of Hofstede to identify differences between nations; however, the values found in this study deviate from the Hofstede model. Only the dimension of Individualism comes close to the scores and visual graph of Hofstede (2019). This implies that the research does not capture the cultural differences according to Hofstede's values. A reason might be the shared backgrounds of employees, or maybe the organizational culture itself. It is not easy to capture a particular level of culture. Nevertheless, the study showed that the moderating variable of indulgence is only significant in The Netherlands. Future research should include other national contexts, determining new cross-culture relationships, and examining the predictive role of cultural dimensions when it comes to technostress and job burnout.

Fourth, this paper used the product indicator approach to determine the moderating effect, one of the dominant approaches for examining the influence of moderating effects (Hair et al., 2017). It would be valuable to determine whether other approaches (e.g., two-stage or orthogonalization approach) come to the same conclusions, and thereby improving the model's support.

Fifthly, prior research has indicated several adverse outcomes of technostress (D'Arcy et al., 2014; Khedhaouria & Cucchi, 2019; Taradarf, Ragu-Nathan, & Tu, 2011). This study chose job burnout as an adverse outcome because it intents to extend the findings of prior research. Future research can examine other adverse outcomes and determine their corresponding impact. Moreover, this study represents only a snapshot of the situation at a specific point in time, whereas a longitudinal study can analyze the adverse outcomes over time and determine how interventions can lead to specific outcomes.

Finally, this study includes three of the six cultural dimensions of Hofstede, which provides support that cultural dimensions do affect the relationship between technostress and job burnout in specific groups. Future research can include the other dimensions of masculinity vs. femininity, uncertainty avoidance index, and short-term vs. long-term to determine whether or not they have a moderating effect on the relationship.

7 Conclusion

Technostress is a phenomenon that is still emerging, and several aspects/influences are not yet fully understood. Especially ‘relationships within organizations’ and ‘organizational factors’ are understudied; this research indicated that national cultural dimensions could impact the relationship between technostress and job burnout. Although not all hypotheses are supported, technostress is measured reflectively, and the sample group is subject to biases, the findings open the door for future research in this area. Within specific groups (e.g., R&D, operational functions), the dimensions of indulgence and individualism tend to influence the strength of the relationship. Another objective was to identify differences between nations, which proved that indulgence does moderate the relationship for Dutch employees; however, this is not significantly different from Germany or Romania. Furthermore, the cultural dimension values showed some differences between the nations, but it did not capture the cultural difference as outlined by Hofstede nor provide evidence for significant differences. Overall, we can conclude that cultural dimensions influence human behavior; however, it requires more follow-up research before stating that this also affects the relationship between technostress and job burnout.

Acknowledgments: A special thank you to the case organization for being so flexible in the current circumstances, and allowing me to do my research in all three countries. Also, thank you to Lars Rieser (Open University) for reviewing and providing valuable input for improving this paper.

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Appendix A – Literature search protocol

This appendix provides more details about the methods used for reviewing the culture, job burnout, and technostress literature. It describes the databases and keywords used for searching, and the search techniques to find relevant articles.

Subject selection

This research is part of the master study of *Business Process Management & IT* (Open University of the Netherlands). The master's program provided several subjects to students as possible graduation assignment. After a selection procedure, the subject of downsides of digitalization (technostress in organizations) was assigned to me, which was also my number one preference. The subject description contained four article suggestions for reading as a starting point for the literature review:

Ayyagari, R., Grover, V., & Pruvis, R. (2011). Technostress: technological antecedents and implications. *MIS Quarterly, 35*(4), 831-858

Tarafdar, M., Tu, Q., & Ragu-Nathan, T. S. (2010). Impact of technostress on end-user satisfaction and performance. *Journal of Management Information Systems, 27*(2), 303-334

Tarafdar, M., Tu, Q., Cooper, C. L., & Stich, J. F. (2019). The technostress trifecta-techno eustress, techno distress and design: Theoretical directions and an agenda for research. *Information Systems Journal, 29*(1), 6-42

Tarafdar, M., Pullins, E. B., & Ragu-Nathan, T. (2015). Technostress: negative effect on performance and possible mitigations. *Information Systems Journal, 25*(2), 103-132

Review methodology

A review of these four articles indicated that the aspects of 'relationships within organizations' and 'organizational factors' remains an understudied area in the literature (Ayyagari, Grover, & Purvis, 2011; Tarafdar, Cooper, & Stich, 2019). Furthermore, Tarafdar, Cooper, and Stich (2019) suggest that the agenda for research in technostress should involve the effects of individual and organizational factors. The database EBSCOhost granted access to several sub-databases in order to retrieve relevant articles. The platform provided access to databases from academic institutions, e-journals, LISTA indexes, psychology and behavioral collections, and several other relevant databases. The first search query includes the keywords of 'techno' and 'stress', and was specifically targeted to find these keywords in the abstracts of peer-reviewed articles.

A total of 291 articles were retrieved. A first screening highlighted two recently published articles, referring to the relationship between cultural dimensions and technostress (Ma & Turel, 2018; Srivastava, Chandra, & Shirish, 2015). These articles provided an interesting possibility for future research. Moreover, I had the ability to execute research in multiple countries due to my function within the case organization. This opened the door even further to explore the impact of cultural dimensions on the level of technostress. A second query was created to determine relevant articles about prior technostress, IS, and culture research. Table 1A provides an overview of the used search queries and retrieved articles.

Table 1A, summary of second query

Search Query	#Hits	#Relevant Articles	Database
Techno AND Culture	782	n/a	EBSCOhost
There were so many search results that it was better to make the search query more specific.			
Techno AND Stress AND Culture	180	0	EBSCOhost
There were so many search results that it was better to make the search query more specific. No relevant articles retrieved.			
Technostress AND Culture	8	2	EBSCOhost
Krishnan, S. (2017). Personality and espoused cultural differences in technostress creators. Computers in Human Behavior, 66, 154-167. Ma, Y., & Turel, O. (2018). Information technology use for work and technostress: effects of power distance and masculinity culture dimensions. *Cognition, Technology & Work, 21*, 145-157.			
Technostress AND Cross-Culture	1	0	EBSCOhost
No relevant articles retrieved.			
Techno AND Cross-Cultural	38	0	EBSCOhost
No relevant articles retrieved.			

By analyzing the references of the articles from the second query, the backward search technique resulted in 8 additional articles. Table 2A provides an overview of these articles. The article of Mooij and Hofstede (2011) introduces the six culture dimensions that distinguish national cultures from each other, including the related values for the dimensions of countries worldwide. The search process showed that the framework of Hofstede is useful and proven to be stable in various studies and disciplines. Moreover, the article by Ma and Turel (2018) determined the effects on technostress based on two of Hofstede's cultural dimensions, which opened the door for future research.

Table 2A, backward search

Backward Search	#Hits	#Relevant Articles
Article - Krishnan, 2017	78	3
Hofstede, G., Hofstede, G.-J., & Minkov, M. (2010). Cultures and Organizations: Software of the Mind (3 ed.). New York: McGraw-Hill Education - Europe. Srivastava, S. C., Chandra, S., & Shirish, A. (2015). Technostress creators and job outcomes: theorizing the moderating influence of personality traits. Information Systems Journal, 25, 355-401. Tarafdar, M., Tu, Q., & Ragu-Nathan, B. S. (2007). The Impact of Technostress on Role Stress and Productivity. Journal of Management Information Systems, 24(1), 301-328.		
Article - Ma & Turel, 2018	76	5
D'Arcy, J., Gupta, A., Tarafdar, M., & Turel, O. (2014). Reflecting on the "Dark Side" of Information Technology Use. Communication of the Association for Information Systems, 35, 109-118. Mooij, M. D., & Hofstede, G. (2011). Cross-Cultural Consumer Behavior: A review of Research Findings. Journal of International Consumer Marketing, 23, 181-192. Gaudioso, F., Turel, O., & Galimberti, C. (2017). The mediating roles of strain facets and coping strategies in translating techno-stressors into adverse job outcomes. Computers in Human Behavior, 69, 189-196. Ragu-Nathan, T. S., Tarafdar, M., Ragu-Nathan, B. S., & Tu, Q. (2008). The consequences of technostress for end users in organizations: Conceptual Development and Empirical Validation. Information Systems Research, 19(4), 417-433. Wang, K., Shu, Q., & Tu, Q. (2008). Technostress under different organizational environment: An empirical investigation. Computers in Human Behavior, 24(6), 3002-3013.		

After doing a backward search, the technique of forward search was applied. This mainly provided more information about the framework of Hofstede in prior I- related studies. Especially the book of Hofstede et al. (2010) is frequently cited, which provided nine relevant articles for this study. Furthermore, forward search retrieved additional articles regarding the relationship with technostress and job burnout. The article by Ragu-Nathan et al. (2008) delivered additional relevant articles.

Table 3A, forward search

Forward Search	**#Hits**	**#Relevant Articles**
Book - Hofstede, G., Hofstede, G.-J., & Minkov, M. (2010)	Hundreds!	9
Azam, M. S., & Quaddus, M. (2013). Examining the Influence of National Culture on Adoption and User of Information and Communication Technology: A Study from Bangladesh's SME Perspective. The National Technology Management Review, 3(2), 116-126. Bond, M. H., Tong, K. K., Au, A. K., & Murakami, F. (2004). Culture-Level Dimension of Social Axioms and Their Correlates Across 41 Cultures. Journal of Cross-Cultural Psychology, 35(5), 548-570. Erumban, A. A., & de Jong, S. B. (2006). Cross-country differences in ICT adoption: A consequence of Culture? Journal of World Business, 41, 302-314. Hofstede, G., & McCrae, R. R. (2004). Personality and Culture Revisited: Linking Traits and Dimensions of Culture. Cross-Cultural Research, 38(1), 52-88. doi:10.1177/1069397103259443 Hofstede, G.-J. (2001). Adoption of communication technologies and national culture. Systèmes d'Information et Management , 6(3), 55-74. Huang, F., Teo, T., Sánchez-Prieto, J. C., García-Peñalvo, F. J., & Olmos-Migueláñez, S. (2019). Cultural values and technology adoption: A model comparison with university teachers from China and Spain. Computers & Education, 133, 69-81. Mahomed, A. S., McGrath, M. G., & Yuh, B. Z. (2017). The role of national culture on email usage among non-academic staff in Malaysian public universities. International Journal of Economics and Management, 11(1), 153-185. Migliore, L. A. (2011). Relation between big five personality traits and Hofstede's cultural dimensions. Cross Cultural Management: An International Journal, 18(1), 38-54. Sørnes, J.-O., Stephens, K. K., Sætre, A. S., & Browning, L. D. (2004). The Reflexivity between ICTs and Business Culture: Applying Hofstede's Theory to Compare Norway and the United States. Informing Science Journal, 7.		
Article - Ragu-Nathan et al. (2008)	191	3
Carlotto, M. S., Wendt, G. W., & Jones, A. P. (2017). Technostress, Career Commitment, Satisfaction with Life, and Work-Family Interaction Among Workers in Information and Communication Technologies. Actualidades en Psicología, 31(122), 91-102. Carlotto, M. S., Wendt, G. W., & Jones, A. P. (2017). Technostress, Career Commitment, Satisfaction with Life, and Work-Family Interaction Among Workers in Information and Communication Technologies. Actualidades en Psicología, 31(122), 91-102. Khedhaouria, A., & Cucchi, A. (2019). Technostress creators, personality traits, and job burnout: A fuzzy-set configurational analysis. Journal of Business Research, 101, 349-361.		

The literature review and search continued by reading the retrieved articles and applying backward and forward search techniques. This resulted in a good understanding of the current literature and finding possible areas of research. Additional search queries helped to retrieve as many relevant articles as possible (see Table 4A).

Table 4A, Additional search queries

Search Query	#Hits	#Relevant Articles	Database
Personality Traits AND Culture AND Hofstede	51	3	EBSCO
National Culture AND ICT	44	4	EBSCO
Culture AND ICT AND Influence	123	2	EBSCO
Technostress AND Power Distance	3	2	EBSCO
Power Distance AND stress AND technology	146	2	EBSCO
Technostress AND Individualism	0	0	EBSCO
Indulgence AND stress AND technology	30	1	EBSCO
Technostress AND Indulgence	0	0	EBSCO
Individualism AND stress AND technology	30	1	EBSCO
Indulgence AND stress	50	0	EBSCO
Indulgence AND ICT	1	1	EBSCO
Technology AND burnout	713	3	EBSCO
Technostress AND burnout	6	4	EBSCO
Stress AND burnout AND technology	145	2	EBSCO

Altogether, about 40 to 50 relevant articles have been retrieved for this study. Some of them are related to prior technostress research, whereas others determine possible links between culture, technostress, and job burnout. This led to formulating the following research question: *Do national culture dimensions impact the relationship between technostress and a technostress outcome?*

Appendix B – Operationalization of the research constructs

	English	*Dutch*	*German*
	Technostress (Ragu-Nathan et al.,2008; Tarafdar et al., 2007) ~ Measured using a 5-point Likert Scale		
TS01	There are constant changes in computer software in our organization.	Er zijn voortdurend veranderingen in computersoftware binnen onze organisatie.	Es gibt ständig Veränderungen der Computersoftware in unserer Organisation.
TS02	There are always new developments in the technologies we use in our organization.	Er zijn altijd nieuwe ontwikkelingen in de technologieën die we binnen onze organisatie gebruiken.	Es gibt immer neue Technologieentwicklungen, die wir in unserem Unternehmen einsetzen.
TS03	I often find it too complex for me to understand and use new technologies.	Ik vind het regelmatig te ingewikkeld om nieuwe technologieën te begrijpen en te gebruiken.	Ich finde es oft zu komplex, um neue Technologien zu verstehen und an zu wenden.
TS04	I am forced to change my work habits to adapt to new technologies.	Ik word gedwongen mijn werkgewoontes te veranderen om me aan te passen aan nieuwe technologieën.	Ich werde gezwungen, meine Arbeitsgewohn-heiten zu ändern, um mich an neue Technologien anzupassen.
TS05	I am forced by technology to work much faster.	Ik word door technologie gedwongen om veel sneller te werken.	Ich werde durch die Technologien gezwungen, viel schneller zu arbeiten.
TS06	I feel my personal life is being invaded by technology.	Ik heb het gevoel dat mijn persoonlijke leven sterk wordt beïnvloed door technologieën.	Ich habe das Gefühl, daß mein Privatleben von Technologien bestimmt wird.
TS07	I do not know enough about the (new) technologies in order to handle my job satisfactorily.	Ik weet niet genoeg over de (nieuwe) technologieën om mijn baan naar tevredenheid uit te voeren.	Ich weiß nicht genug über die (neuen) Technologien, um die Arbeit zufriedenstellend zu erledigen.
TS08	I have a higher workload because of increased technology complexity.	Ik heb een hogere werkdruk door de toegenomen complexiteit van technologieën.	Ich habe ein höheres Arbeitspensum aufgrund der zugenommenen Komplexität von Technologien.
TS09	I have to be in touch with my work during my vacation due to technology.	Ik moet door de technologiën tijdens mijn vakantie in verbinding staan met mijn werk.	Wegen der Technologien muß ich während meines Urlaubs beruflich erreichbar sein.
TS10	I am threatened by co-workers with newer technology skills.	Collega's met nieuwere ICT vaardigheden maken mij onzeker.	Mitarbeiter mit neueren Technologiekentnissen sind eine Bedrohung für mich.

	English	*Dutch*	*German*
	Cultural Dimension– Indulgence (García-Peñalvo, 2018; Mahomed, McGrath, & Yuh, 2017) ~ Measured using a 5-point Likert Scale		
IND01	Leisure time is a very important part in my life.	Vrije tijd is een ontzettend belangrijk onderdeel van mijn leven.	Die Freizeit ist ein sehr wichtiger Teil meines Lebens.
IND02	It is important to have moderation (e.g. having few desires).	Het is belangrijk om gematigdheid te zijn (bijv. weinig wensen te hebben).	Es ist wichtig, Bescheiden zu sein (Z.b. wenige Wünsche zu haben).
IND03	I am a happy person in the workplace.	Ik ben een gelukkig mens op de werkvloer.	Ich bin ein glücklicher Mensch am Arbeitsplatz.
IND04	There are no other people or circumstances that ever prevent me from doing what I really want to do in the workplace.	Er zijn geen mensen of omstandigheden die me verhinderen om te doen wat ik echt wil doen op de werkvloer.	Es gibt keine anderen Menschen oder Umstände die mich jemals daran hindern, das zu tun, was ich wirklich am Arbeitsplatz tun möchte.
IND05	Well-being is very important to me.	Welzijn is erg belangrijk voor mij.	Mein Wohlbefinden am Arbeitsplatz ist mir sehr wichtig.
	Cultural Dimension– Individualism (García-Peñalvo, 2018; Kirshnan, 2017) ~ Measured using a 5-point Likert Scale		
IDV01	Group success is more important than individual success.	Groepsucces is belangrijker dan individueel succes.	Der Gruppenerfolg is wichtiger als der individuelle Erfolg.
IDV02	Group interest/welfare is more important than individual interest/welfare.	Groepsbelang/-welzijn is belangrijker dan individueel belang.	Das Interesse und Wohl der Gruppe ist wichtiger, als das Individuelle Interesse.
IDV03	Being accepted as a member of a group is more important than having autonomy and independence.	Acceptatie als lid van een groep is belangrijker dan het hebben van autonomie en onafhankelijkheid.	Als Mitglied einer Gruppe ist wichtiger als Eigenständig und Unabhängig zu sein.
IDV04	Individuals should sacrifice self-interest for group interest that they belong to.	Individuen moeten hun eigenbelang opofferen voor het groepsbelang waartoe ze behoren.	Einzelne sollten eigene Interessen denen der Gruppe unterordnen.
IDV05	Individuals should stick with the group even with difficulties.	Individuen zullen ook bij moeilijkheden bij een groep moeten blijven.	Einzelne sollten, auch wenn es Schwierigkeiten gibt, in der Gruppe bleiben.

	English	*Dutch*	*German*
	Cultural Dimension– Power Distance (Kirshnan, 2017; Ma & Turel,2019) ~ Measured using a 5-point Likert Scale		
PDI01	People in higher positions should make most decisions without consulting people in lower positions.	Mensen in hogere functies zouden de meeste beslissingen moet nemen zonder overleg te plegen met mensen in lagere functies.	Menschen in höheren Positionen sollten die meisten Entscheidungen treffen ohne Beratung von Menschen in niedrigeren Positionen.
PDI02	Decision-making power should stay with top management in the organization and not be delegated to lower-level employees.	De beslissingsbevoegdheid moet bij het top-management van de organisatie blijven en niet worden gedelegeerd aan medewerkers in lagere functies.	Die Entscheidungsbefugnis sollte beim Top-Management in der Organisation verbleiben und nicht an Mitarbeiter in niedrigeren Positionen delegiert werden.
PDI03	People in higher positions should not ask the opinions of people in lower positions too frequently.	Mensen in hogere functies moeten niet te vaak naar de mening van mensen in lagere posities vragen.	Menschen in höheren Positionen sollten nicht zu häufig die Meinung von Menschen in niedrigeren Positionen erfragen.
PDI04	People in higher positions should not delegate important tasks to people in lower positions.	Mensen in hogere functies moeten geen belangrijke taken delegeren aan mensen in lagere functies.	Menschen in höheren Positionen sollten keine wichtigen Aufgaben an Menschen in niedrigeren Positionen delegieren.
PDI05	People in lower positions should not disagree with decisions by people in higher positions.	Mensen in lagere posities moeten het niet oneens zijn met beslissingen van mensen in hoger functies.	Menschen in niedrigeren Positionen sollten Entscheidungen von Menschen in höheren Positionen nicht in Frage stellen.
	Job Burnout (Ayyagar & Purvis, 2011; Gaudioso et al., 2017; Khedhaouria & Cucchi, 2019; Srivastava, 2015) ~ Measured using a 5-point Likert Scale		
JB01	Working at my job all day long requires a great deal of effort.	De hele dag werken op mijn werk vergt veel inspanning.	Den ganzen Tag in meinem Job zu arbeiten, erfordert große Mühe.
JB02	I feel I work too hard on my job.	Ik heb het gevoel dat ik te hard werk aan mijn werk.	Ich habe das Gefühl, dass ich zu hart in meinem Job arbeite.
JB03	It stresses me too much to work on my job.	Het strest me te veel om aan mijn werk te werken.	Mein Job stresst mich zu sehr.
JB04	I feel used up at the end of the workday.	Ik voel me opgebrand aan het einde van de werkdag.	Am Ende des Arbeitstages fühle ich mich ausgelaugt.

	English	*Dutch*	*German*
	Job Burnout (Ayyagar & Purvis, 2011; Gaudioso et al., 2017; Khedhaouria & Cucchi, 2019; Srivastava, 2015) ~ Measured using a 5-point Likert Scale		
JB05	I feel emotionally drained by my work.	Ik voel me emotioneel uitgeput door mijn werk.	Ich fühle mich durch meine Arbeit emotional ausgelaugt.
JB06	I feel my work is breaking me down.	Ik heb het gevoel dat mijn werk me opbreekt.	Ich habe das Gefühl, dass mich meine Arbeit kaputt macht.
JB07	I feel burned out from my work.	Ik voel me uitgeput door mijn werk.	Ich fühle mich durch meine Arbeit ausgelaugt.
JB08	I have difficulty concentrating.	Ik heb moeite om me te concentreren.	Ich habe Schwierigkeiten mich zu konzentrieren.
JB09	Working all day with information and communication systems (ICT) is a strain for me.	De hele dag met informatie en communicatie-systemen (ICT) werken is voor mij een belasting.	Es ist für mich eine Belastung, den ganzen Tag mit Informations- un Kommunikations-technologien zu arbeiten.
JB10	I feel fatigued when I get up in the morning and have to face another day on the job.	Ik voel me moe als ik 's morgens opsta en nog een dag op het werk tegemoet ga.	Ich fühle mich müde, wenn ich morgens aufstehe und einen neuen Arbeitstag angehen muss.
	Demographic Information ~ Measured using open questions		
GQ01	What is your age?	Wat is uw leeftijd?	Was ist Ihr Alter?
GQ02	What is your gender?	Wat is uw geslacht?	Was ist Ihr Geschlecht?
GQ03	How many years of work experience do you have?	Hoeveel jaar werkervaring hebt u?	Wie viele Jahre Berufserfahrung haben Sie?
GQ04	How many years have you been active in your current role?	Hoeveel jaar bent u al actief in uw huidige functie?	Wie viele Jahre sind Sie in Ihrer jetzigen Rolle aktiv?
GQ05	What is your workplace location?	Wat is uw werkpleklocatie?	Wo ist Ihr Arbeitsplatz?

	English	*Dutch*	*German*
	Demographic Information ~ Measured using open questions		
GQ06	Do you work in a managing function or an operational function?	Werkt u in een managementfunctie of een operationele functie?	Sind Sie in einer leitenden oder operativen Funktion tätig?
GQ07	In what kind of department do you currently work?	Op wat voor een soort afdeling werkt u momenteel?	In welcher Art von Abteilung arbeiten Sie zur Zeit?
GQ08	How much hours do you work in a week?	Hoeveel uur werkt u per week?	Wie viele Stunden arbeiten Sie in einer Woche?

Appendix C – Summary control variables

This appendix provides the overall and country details of each control variable. The table below expresses the values per country, the total value, and overall percentages.

Table 1C, detailed information on sample demographics

	Germany	Romania	The Netherlands	Total	Percentage
Age					
Below 26	1	13	2	16	5,5%
26 to 35	2	14	22	38	13,3%
36 to 45	4	27	35	66	23,1%
46 to 55	13	9	76	98	34,3%
56 to 65	5	0	60	65	22,7%
Above 65	1	0	2	3	1,1%
Department					
Business Unit	4	1	7	12	4,2%
Manufacturing & Logistics	5	0	86	91	31,8%
Research & Development	2	54	30	86	30,1%
Supporting Functions	15	8	74	97	33,9%
Function Level					
Management Function	7	8	28	43	15,0%
Operational Function	19	55	169	243	85,0%
Gender					
Female	9	16	41	66	23,1%
Male	17	47	156	220	76,9%
Working hours per week					
0 to 8 hours	1	2	4	7	2,5%
9 to 16 hours	0	1	3	4	1,4%
17 to 24 hours	1	2	6	9	3,2%
25 to 32 hours	0	3	24	27	9,4%
33 to 40 hours	14	37	99	150	52,4%
More than 40 hours	10	18	61	89	31,1%
Years of working experience					
Less than 6 years	0	17	15	32	11,2%
6 to 10 years	2	9	7	18	6,3%
11 to 15 years	4	22	16	42	14,7%
16 to 20 years	0	8	14	22	7,7%
More than 20 years	20	7	145	172	60,1%
Years in current role					
Less than 6 years	10	43	80	133	46,5%
6 to 10 years	7	14	36	57	19,9%
11 to 15 years	5	4	32	41	14,3%
16 to 20 years	2	2	13	17	6,0%
More than 20 years	2	0	36	38	13,3%

Table 2C, sample mean and standard deviation (STDEV) per construct and country

Country	Technostress	Cultural Dimensions			Job Burnout
		Indulgence	Individualism	Power Distance	
Germany	3,29	2,38	2,62	3,78	3,50
Netherlands, The	3,36	2,19	2,67	3,91	3,59
Romania	3,37	1,97	2,49	3,69	3,59
Overall Mean	3,35	2,16	2,63	3,85	3,58
Germany	1,16	1,04	0,74	0,96	0,89
Netherlands, The	1,21	1,06	0,97	0,98	1,03
Romania	1,09	0,85	0,91	0,97	0,89
Overall STDEV	1,18	1,02	0,95	0,98	0,99

Appendix D – Reliability and validity testing

This appendix provides a deeper explanation of the reliability and validity assessment done for each of the constructs. It shows how the omitting of one or more measures has positively improved the construct's overall reliability and validity.

Technostress

A first analysis of the PLS algorithm proved that the technostress construct needed some slicing and dicing. Several outer loadings, the indicator reliability, and AVE did not meet the required standards. After running multiple analyses, it became clear that the omitting of measures TS01, TS02, and TS09 is unavoidable. No matter which of the three measures were excluded from the calculations, there was no improvement until all three have been omitted. However, this still not led to a reliable and valid construct. The outer loadings slightly improved, but the AVE remained below the threshold of 0.5.

Further analyses showed that the elimination of TS06 and TS09 improved the loadings, indicator reliability, and AVE. Eventually, only five of the ten measures remained in the model, which might be odd for such a well-developed concept. As explained in chapter 5, in prior technostress studies, researches have mostly approached technostress from a second-order formative level. This research approached technostress as a reflective construct. Still, there is a significant relationship with job burnout, even though only five of ten measures remain in the model. The table below shows the values before and after the omitting of the five indicators.

Table 1D, reliability and validity testing of the technostress construct

Status	Indicators	Convergent Validity			Internal Consistency Reliability	
		Loadings	Indicator reliability	AVE	Composite Reliability	Cronbach's alpha
		>0.60	>0.40	>0.50	>0.70	>0.60
Before removal	TS01	0.2720	0.0777	0.3247	0.809	0.754
	TS02	0.2347	0.0584			
	TS03	0.7444	0.5519			
	TS04	0.5586	0.3107			
	TS05	0.6708	0.4525			
	TS06	0.4834	0.2373			
	TS07	0.6825	0.4569			
	TS08	0.7857	0.6181			
	TS09	0.2707	0.0789			
	TS10	0.6413	0.4043			
After removal	TS03	0.7766	0.6034	0.532	0.850	0.780
	TS05	0.6631	0.4394			
	TS07	0.7245	0.5249			
	TS08	0.8019	0.6430			
	TS10	0.6673	0.4453			

Indulgence

The construct of indulgence needed some more attention than the other two cultural constructs. The results indicated that 3 out of 5 measures have reliability and validity values far below the minimum threshold. Even after omitting measure IND2, which contained a negative outer loading, the values did not improve. In order to improve the reliability and validity of the construct, elimination of measures IND1 and IND4 was necessary. Only by eliminating three of the five measures, a reliable and valid construct remained, which left indulgence with only two usable measures. The table below shows the values before and after omitting IND1, IND2, and IDV4.

Table 2D, reliability and validity testing of the indulgence construct

Status	Indicators	Convergent Validity			Internal Consistency Reliability	
		Loadings	Indicator reliability	AVE	Composite Reliability	Cronbach's alpha
		>0.60	>0.40	>0.50	>0.70	>0.60
Before removal	IND1	0.2309	0.0453	0.302	0.515	0.424
	IND2	-0.2455	0.0502			
	IND3	0.8461	0.7350			
	IND4	0.7527	0.5728			
	IND5	0.3404	0.1055			
After removal	IND3	0.9089	0.8266	0.717	0.834	0.612
	IND4	0.7793	0.6067			

Individualism

The PLS algorithm showed that some outer loadings and indicator reliability values of the construct of individualism contained values below the minimum threshold (IDV3 and IDV4). Furthermore, the AVE value was not even close to reaching the threshold (>0.5). After the omitting of measures IDV3 and IDV4, all values and outer loadings present proper values. Cronbach's alpha dropped precisely to the minimum threshold; however, further analysis showed that omitting another measure would make it worse. This means that eventually, only three measures remained in the model. The table below shows the values before and after omitting IDV3 and IDV4.

Table 3D, reliability and validity testing of the individualism construct

Status	Indicators	Convergent Validity			Internal Consistency Reliability	
		Loadings	Indicator reliability	AVE	Composite Reliability	Cronbach's alpha
		>0.60	>0.40	>0.50	>0.70	>0.60
Before removal	IDV1	0.6422	0.4362	0.389	0.744	0.668
	IDV2	0.7812	0.5889			
	IDV3	0.2655	0.1067			
	IDV4	0.5723	0.3616			
	IDV5	0.7227	0.5115			
After removal	IDV1	0.6868	0.5096	0.548	0.785	0.600
	IDV2	0.7846	0.5852			
	IDV5	0.7450	0.5508			

Power Distance

After running the PLS algorithm, the measures of power distance already showed some sufficient values. Both Cronbach's alpha and composite reliability were above the minimum thresholds. However, the AVE value was below 0.5 as well as measure PDI5 had a loading below 0.6. After running several algorithms without one of the measures, it became clear that removing measure PDI5 improves the validity and reliability of the construct the most. The table below shows the values before and after omitting PDI5.

Table 4D, reliability and validity testing of the power distance construct

Status	Indicators	Convergent Validity			Internal Consistency Reliability	
		Loadings	Indicator reliability	AVE	Composite Reliability	Cronbach's alpha
		>0.60	>0.40	>0.50	>0.70	>0.60
Before removal	PDI1	0.7866	0.6372	0.461	0.808	0.725
	PDI2	0.6488	0.4109			
	PDI3	0.7217	0.5459			
	PDI4	0.6935	0.4355			
	PDI5	0.5129	0.2558			

After removal	**PDI1**	0.7997	0.6394	0.509	0.805	0.692
	PDI2	0.6400	**0.4090**			
	PDI3	0.7466	0.5581			
	PDI4	0.6562	0.4304			

Job burnout

The reliability and validity values of the construct of job burnout immediately showed promising values. The internal consistency reliability values were very high, and the convergent validity had all values above the threshold, except for the outer loading of JB09 and the indicator reliability of JB08 and JB09. After removing the indicator JB09 from the model, the AVE improved slightly, and all outer loadings remained above 0.6. However, indicator JB08 still had an indictor reliability that was below the 0.4 threshold. After omitting measure JB08 and rerunning the PLS algorithm, the construct's reliability and validity improved even more. The AVE increased by 0.07 to 0.621. Therefore, it was decided to delete both measures from the model. The table below shows the values before and after omitting JB08 and JB09.

Table 5D11, reliability and validity testing of the technostress construct

Status	**Indicators**	**Convergent Validity**			**Internal Consistency Reliability**	
		Loadings	**Indicator reliability**	**AVE**	**Composite Reliability**	**Cronbach's alpha**
		>0.60	**>0.40**	**>0.50**	**>0.70**	**>0.60**
Before removal	**JB01**	0.6416	0.4124	0.555	0.924	0.907
	JB02	0.6807	0.4626			
	JB03	0.7912	0.6232			
	JB04	0.8137	0.6615			
	JB05	0.8288	0.6872			
	JB06	0.8846	0.7842			
	JB07	0.8540	0.7318			
	JB08	**0.6186**	**0.3840**			
	JB09	**0.5612**	**0.3135**			
	JB10	0.6982	0.4872			
After removal	**JB01**	0.6374	**0.4086**	0.621	0.928	0.910
	JB02	0.6988	0.4878			
	JB03	0.8088	0.6516			
	JB04	0.8255	0.6801			
	JB05	0.8400	0.7049			
	JB06	0.8938	0.8001			
	JB07	0.8687	0.7568			
	JB10	0.6910	0.4771			

Appendix E – Assessment of structural Model

Assessing the structural model with the PLS-SEM method requires several steps (Hair et al., 2017). The first step is to assess the structural model for collinearity issues. The table below provides an overview of the VIF values of the collinearity test. The overview shows that all VIF-values that are nicely below the threshold of 5, meaning that no collinearity issues are present.

Table 1E, variance inflation factor results of the measures

Indicator	Job burnout	Power Distance	Individualism	Indulgence	Technostress
[TS03]					1.5563
[TS05]					1.4015
[TS07]					1.7486
[TS08]					1.8534
[TS10]					1.3987
[IND3]				1.2497	
[IND4]				1.2497	
[IDV1]			1.3439		
[IDV2]			1.4016		
[IDV5]			1.0954		
[PD1]		1.4477			
[PD2]		1.3965			
[PD3]		1.2018			
[PD4]		1.3251			
[JB1]	1.5620				
[JB2]	1.7927				
[JB3]	2.3298				
[JB4]	2.5180				
[JB5]	2.8715				
[JB6]	4.2210				
[JB7]	3.7012				
[JB10]	1.5757				

The second step is to test the significance and relevance of direct relationships. In SmartPLS, the structural model is created based on reliable and valid constructs and its corresponding measures. The screenshot below provides an overview of the structural model (blue circles) and the moderating hypotheses (purple circles).

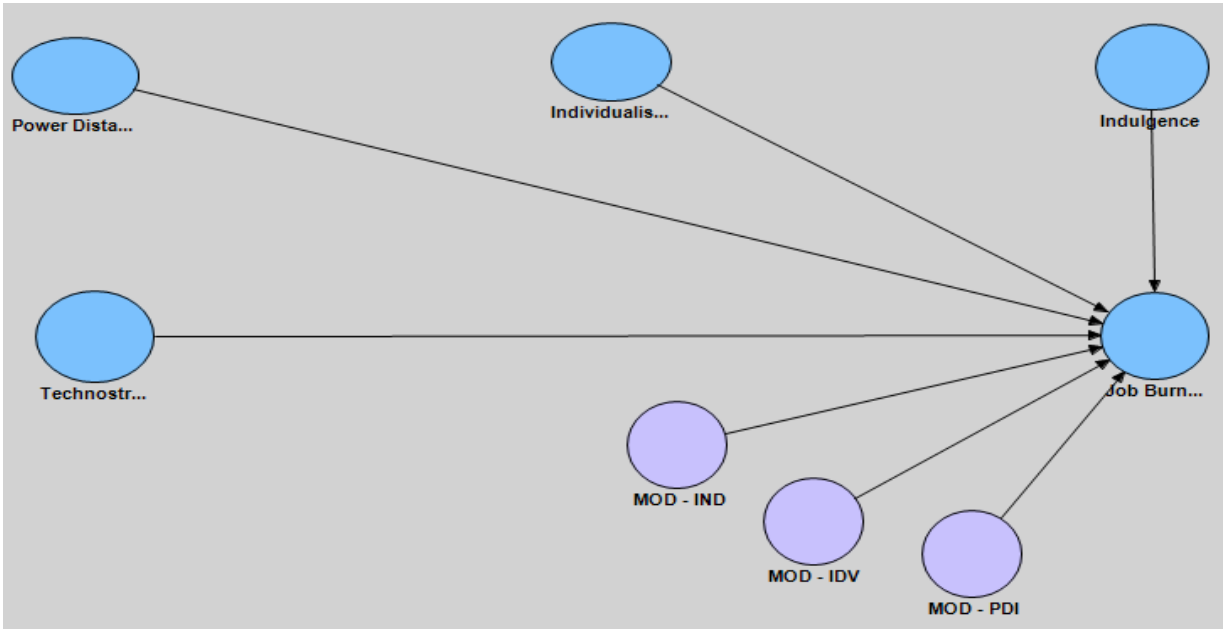


Figure 1E, overview of structural model in SmartPLS 2

Paragraph 5.3 and 5.4 explain the remaining four steps (assign coefficient of determination, assess effect sizes, assess predictive relevant, and assess effect sizes); therefore, this appendix does not explain the outcomes of these steps any further.

Appendix F – Multi-Group analysis

The questionnaire contained several demographic variables. This appendix provides an overview of results after conducting a multi-group analysis (bootstrap sample of 5000) for each demographic variable.

Demographic variable - Gender

Table 1F, the multi-group analysis results for the direct relationships within the control variable of gender

		Bootstrapping Results			Parametric Test	
Relationship	**Gender**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	Female	-0.065	0.161	0.549	0.097	0.694
	Male	-0.009	0.060	0.140		
Indulgence -> Job burnout	Female	-0.414	0.102	4.148***	0.101	0.719
	Male	-0.320	0.071	4.548***		
Power Distance -> Job burnout	Female	0.051	0.162	0.603	0.005	0.037
	Male	0.117	0.060	1.723		
Technostress -> Job burnout	Female	0.280	0.112	2.489**	0.101	0.794
	Male	0.379	0.061	6.191***		

***p<0.01, **p<0.05, *p<0.1

Table 2F, the multi-group analysis results for the moderator relationships within the control variable of gender

		Bootstrapping Results			Parametric Test	
Relationship	**Gender**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	Female	0.007	0.061	0.057	-0.010	0.095
	Male	-0.019	0.057	0.120		
Technostress * Indulgence -> Job burnout	Female	-0.144	0.110	1.685*	0.103	0.680
	Male	-0.069	0.076	1.069		
Technostress * Individualism -> Job burnout	Female	0.046	0.046	1.361	-0.033	0.527
	Male	0.035	0.031	0.935		

***p<0.01, **p<0.05, *p<0.1

Demographic variable – Function

The function variable divides the sample group into employees in a management function or an operational function. The main difference between the two is that employees in management functions have more responsibility and are held accountable for people that are part of their team.

Table 3F12, the multi-group analysis results for the direct relationships within the control variable of function

		Bootstrapping Results			Parametric Test	
Relationship	**Function**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	Manage.	0.286	0.204	1.678*	0.377	2.555**
	Operation	-0.048	0.051	0.679		
Indulgence -> Job burnout	Manage.	-0.333	0.127	2.563**	0.018	0.110
	Operation	0.339	0.065	5.245***		
Power Distance -> Job burnout	Manage.	0.166	0.157	0.817	0.035	0.230
	Operation	0.106	0.057	1.647		
Technostress -> Job burnout	Manage.	0.345	0.119	2.767***	-0.039	0.259
	Operation	0.371	0.060	6.093***		

***p<0.01, **p<0.05, *p<0.1

Table 4F, the multi-group analysis results for the moderator relationships within the control variable of function

		Bootstrapping Results			Parametric Test	
Relationship	**Function**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	Manage.	0.045	0.112	0.469	0.054	0.454
	Operation	-0.010	0.046	0.029		
Technostress * Indulgence -> Job burnout	Manage.	-0.125	0.170	0.617	0.096	0.635
	Operation	-0.092	0.064	1.807***		
Technostress * Individualism -> Job burnout	Manage.	0.008	0.115	0.286	-0.033	0.371
	Operation	0.051	0.032	2.068**		

***p<0.01, **p<0.05, *p<0.1

Demographic variable – Location

The second objective of this study is to compare the collected data of different countries and identify differences between nations. This section indicates whether or not the hypotheses find support in Germany, Romania, or The Netherlands. First, the analysis explores the difference between Germany and the Netherlands. For the direct relationship, it became clear that none of them are significant for Germany (table 5F); however, this is probably due to the small sample size. For the Netherlands, the direct relationships of indulgence and technostress are highly significant as expected after seeing the results of the overall structure in paragraph 5.3.

Table 5F, the multi-group analysis results for the direct relationships within the control variable of location (DE-NL)

		Bootstrapping Results			Parametric Test	
Relationship	**Location**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	DE	0.137	0.235	0.967	0.220	1.180
	NL	-0.012	0.061	0.126		
Indulgence -> Job burnout	DE	-0.213	0.456	1.123	-0.116	0.456
	NL	-0.386	0.071	5.563***		
Power Distance -> Job burnout	DE	0.166	0.224	0.565	0.069	0.378
	NL	0.078	0.060	0.967		
Technostress -> Job burnout	DE	0.283	0.220	1.339	-0.087	0.466
	NL	0.383	0.062	6.165***		

***p<0.01, **p<0.05, *p<0.1

Testing for moderation reveals that for The Netherlands, indulgence negatively moderates the relationship between technostress and job burnout, whereas, the t-value for Germany is not significant. Parametric testing proved no significant difference between both countries

Table 6F, the multi-group analysis results for the moderator relationships within the control variable of location (DE-NL)

		Bootstrapping Results			Parametric Test	
Relationship	**Location**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	DE	-0.124	0.179	1.410	-0.211	1.518
	NL	-0.042	0.045	0.889		
Technostress * Indulgence -> Job burnout	DE	-0.004	0.191	0.148	0.153	0.846
	NL	-0.111	0.061	2.043**		
Technostress * Individualism -> Job burnout	DE	-0.056	0.190	0.652	-0.149	1.474
	NL	0.026	0.028	0.918		

***p<0.01, **p<0.05, *p<0.1

Secondly, a multi-group analysis assesses the difference between The Netherlands and Romania. For both countries, the direct relationship between technostress and job burnout is significant (see Table 7F). However, the Netherlands shows a highly significant relationship between indulgence and job burnout, whereas, in Romania, this direct relationship is not significant. Parametric testing indicates no significant differences.

Table 7F, the multi-group analysis results for the direct relationships within the control variable of location (RO-NL)

		Bootstrapping Results			Parametric Test	
Relationship	**Location**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	RO	-0.134	0.136	0.704	-0.103	0.770
	NL	-0.009	0.063	0.122		
Indulgence -> Job burnout	RO	-0.138	0.156	0.966	0.246	1.593
	NL	-0.389	0.072	5.486***		
Power Distance -> Job burnout	RO	0.097	0.195	0.552	0.050	0.327
	NL	0.077	0.060	0.959		
Technostress -> Job burnout	RO	0.353	0.112	3.107***	-0.035	0.782
	NL	0.382	0.062	6.149***		

***p<0.01, **p<0.05, *p<0.1

The analysis of the moderators indicates that only in The Netherlands, there is a significant moderator. The dimension of indulgence negatively moderates the relationship between technostress and job burnout. In Romania, this moderation is not present; moreover, parametric testing shows no significant difference between both groups. The table below provides an overview of the moderation relationships' results of Romania and The Netherlands.

Table 8F13, the multi-group analysis results for the moderator relationships within the control variable of location (RO-NL)

		Bootstrapping Results			Parametric Test	
Relationship	**Location**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	RO	0.052	0.118	0.613	0.112	1.083
	NL	-0.042	0.045	0.886		
Technostress * Indulgence -> Job burnout	RO	0.004	0.134	0.344	0.171	1.306
	NL	-0.110	0.061	2.054**		
Technostress * Individualism -> Job burnout	RO	0.051	0.108	1.256	0.110	1.404
	NL	0.026	0.028	0.899		

***p<0.01, **p<0.05, *p<0.1

Lastly, the analysis compares Germany and Romania with each other. For Germany, none of the values provide support for the relationships. Only in Romania, the direct relationship between technostress and job burn out is significant. Table 9F indicates that parametric testing reveals no significant differences between both countries.

Table 9F, the multi-group analysis results for the direct relationships within the control variable of location (DE-RO)

		Bootstrapping Results			Parametric Test	
Relationship	**Location**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	DE	0.128	0.237	0.958	0.323	1.246
	RO	-0.134	0.137	0.697		
Indulgence -> Job burnout	DE	-0.206	0.458	1.118	-0.362	0.963
	RO	-0.139	0.157	0.958		
Power Distance -> Job burnout	DE	0.168	0.223	0.568	0.019	0.057
	RO	0.094	0.194	0.554		
Technostress -> Job burnout	DE	0.277	0.222	1.328	-0.052	0.232
	RO	0.352	0.114	3.033***		

***p<0.01, **p<0.05, *p<0.1

For both countries, the moderating relationships found no statistical support. Table 10F provides an overview of the moderating relationships and their related values.

Table 10F, the multi-group analysis results for the moderator relationships within the control variable of location (DE-RO)

		Bootstrapping Results			Parametric Test	
Relationship	**Location**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	DE	-0120	0.181	1.390	-0.324	1.540
	RO	0.057	0.114	0.630		
Technostress * Indulgence -> Job burnout	DE	-0.006	0.207	0.137	0.018	0.074
	RO	0.001	0.134	0.346		
Technostress * Individualism -> Job burnout	DE	-0.054	0.204	0.608	0.259	1.191
	RO	0.048	0.109	1.244		

***p<0.01, **p<0.05, *p<0.1

Demographic variable – Department

The sample group consists of employees from four main departments: Business Unit (BU), Manufacturing & Logistics (M&L), Research & Development (R&D), and the Supporting Functions (SF). The number of respondents in the Business Unit department was very low (16 respondents), and, therefore, it makes no sense to run a multi-group analysis for this group. All other departments had a sufficient amount of respondents.

M&L vs R&D

Table 11F, the multi-group analysis results for the direct relationships within the control variable of department (M&L-R&D)

		Bootstrapping Results			Parametric Test	
Relationship	**Depart.**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	M&L	-0.066	0.097	0.632	-0.031	0.213
	R&D	-0.058	0.110	0.274		
Indulgence -> Job burnout	M&L	-0.325	0.096	3.506***	0.133	0.881
	R&D	-0.436	0.119	3.931***		
Power Distance -> Job burnout	M&L	0.103	0.135	0.699	-0.116	0.592
	R&D	0.201	0.143	1.468		
Technostress -> Job burnout	M&L	0.410	0.093	4.398***	0.239	1.583
	R&D	0.193	0.122	1.382		

***p<0.01, **p<0.05, *p<0.1

Table 12F, the multi-group analysis results for the moderator relationships within the control variable of department (M&L-R&D)

		Bootstrapping Results			Parametric Test	
Relationship	**Depart.**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	M&L	-0.030	0.059	1.158	-0.045	0.470
	R&D	-0.016	0.078	0.295		
Technostress * Indulgence -> Job burnout	M&L	-0.019	0.086	0.497	-0.062	1.881***
	R&D	-0.111	0.097	2.056**		
Technostress * Individualism -> Job burnout	M&L	0.032	0.035	0.803	0.060	0.834
	R&D	-0.011	0.065	0.497		

***p<0.01, **p<0.05, *p<0.1

M&L vs Supporting Functions

Table 13F14, the multi-group analysis results for the direct relationships within the control variable of department (M&L-Supporting Functions)

		Bootstrapping Results			Parametric Test	
Relationship	**Depart.**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	M&L	-0.068	0.097	0.633	-0.048	0.318
	SF	0.025	0.115	0.116		
Indulgence -> Job burnout	M&L	-0.326	0.095	3.521***	-0.087	0.642
	SF	-0.241	0.098	2.530**		
Power Distance -> Job burnout	M&L	0.102	0.135	0.699	0.086	0.557
	SF	0.038	0.080	0.110		
Technostress -> Job burnout	M&L	0.409	0.093	4.385***	-0.097	0.774
	SF	0.505	0.085	5.963***		

***p<0.01, **p<0.05, *p<0.1

Table 14F, the multi-group analysis results for the moderator relationships within the control variable of department (M&L-Supporting Functions)

		Bootstrapping Results			Parametric Test	
Relationship	**Depart.**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	M&L	-0.031	0.059	1.149	-0.109	0.887
	SF	-0.006	0.078	0.518		
Technostress * Indulgence -> Job burnout	M&L	-0.019	0.087	0.495	0.114	0.985
	SF	-0.064	0.078	0.912		
Technostress * Individualism -> Job burnout	M&L	0.033	0.034	0.809	-0.014	0.202
	SF	0.003	0.060	0.702		

***p<0.01, **p<0.05, *p<0.1

R&D vs Supporting Functions

Table 15F15, the multi-group analysis results for the direct relationships within the control variable of department (R&D-Supporting Functions)

		Bootstrapping Results			Parametric Test	
Relationship	**Depart.**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	R&D	-0.056	0.111	0.271	-0.017	0.106
	SF	0.022	0.114	0.117		
Indulgence -> Job burnout	R&D	-0.438	0.122	3.854***	-0.021	1.444
	SF	-0.243	0.097	2.566**		
Power Distance -> Job burnout	R&D	0.209	0.138	1.525	0.202	1.308
	SF	0.039	0.080	0.110		
Technostress -> Job burnout	R&D	0.194	0.120	1.406	-0.336	2.367**
	SF	0.503	0.082	6.127***		

***p<0.01, **p<0.05, *p<0.1

Table 16F, the multi-group analysis results for the moderator relationships within the control variable of department (R&D-Supporting Functions)

		Bootstrapping Results			Parametric Test	
Relationship	**Depart.**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	R&D	-0.018	0.080	0.286	-0.063	0.572
	SF	-0.005	0.077	0.525		
Technostress * Indulgence -> Job burnout	R&D	-0.112	0.096	2.073**	-0.128	1.054
	SF	-0.063	0.078	0.910		
Technostress * Individualism -> Job burnout	R&D	-0.012	0.066	0.485	-0.074	0.818
	SF	0.000	0.062	0.671		

***p<0.01, **p<0.05, *p<0.1

Demographic variable – Age

The demographic variable of age comprises six main groups; however, the number of respondents in the group *below 26* and *above 65* are too small to conduct a proper multi-group analysis. Therefore, these groups merge with other groups. The groups *below 26* and *26-35,* as well as the groups *56-65* and *above 65,* have been consolidated into one group. Table 17F provides an overview before and after the consolidation.

Table 17F, consolidation of the age groups

Groups	Total	Groups	Total
Below 26	16		
26 to 35	38	**Below 36**	54
36 to 45	66	**36 to 45**	66
46 to 55	98	**46 to 55**	98
56 to 65	65	**Above 55**	68
Above 65	3		

Age below 36 vs 36-45

Table 18F, the multi-group analysis results for the direct relationships within the control variable of age (below36-36to45)

		Bootstrapping Results			Parametric Test	
Relationship	**Age**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	Below 36	-0.152	0.098	1.380	-0.123	0.738
	36 to 45	-0.039	0.129	0.094		
Indulgence -> Job burnout	Below 36	-0.468	0.096	4.976***	-0.388	2.379**
	36 to 45	-0.081	0.126	0.705		
Power Distance -> Job burnout	Below 36	0.258	0.111	2.046**	-0.036	0.201
	36 to 45	0.267	0.138	1.904*		
Technostress -> Job burnout	Below 36	0.166	0.139	1.041	-0.431	2.670***
	36 to 45	0.551	0.093	6.170***		

***p<0.01, **p<0.05, *p<0.1

Table 19F, the multi-group analysis results for the moderator relationships within the control variable of age (below36-36to45)

		Bootstrapping Results			Parametric Test	
Relationship	**Age**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	Below 36	-0.078	0.106	1.286	-0.163	1.025
	36 to 45	-0.004	0.117	0.233		
Technostress * Indulgence -> Job burnout	Below 36	-0.123	0.116	1.484	-0.227	1.675*
	36 to 45	0.048	0.080	0.694		
Technostress * Individualism -> Job burnout	Below 36	-0.047	0.073	0.723	-0.265	2.686***
	36 to 45	0.076	0.068	3.145***		

***p<0.01, **p<0.05, *p<0.1

Age below 36 vs 46-55

Table 20F, the multi-group analysis results for the direct relationships within the control variable of age (below36-46to55)

		Bootstrapping Results			Parametric Test	
Relationship	**Age**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	Below 36	-0.150	0.096	1.414	-0.144	0.888
	46 to 55	0.008	0.108	0.075		
Indulgence -> Job burnout	Below 36	-0.471	0.097	4.913***	0.050	0.365
	46 to 55	-0.503	0.088	5.996***		
Power Distance -> Job burnout	Below 36	0.258	0.107	2.120**	0.241	1.364
	46 to 55	0.006	0.118	0.122		
Technostress -> Job burnout	Below 36	0.161	0.143	1.014	-0.148	0.964
	46 to 55	0.296	0.084	3.507***		

***p<0.01, **p<0.05, *p<0.1

Table 21F, the multi-group analysis results for the moderator relationships within the control variable of age (below36-46to55)

		Bootstrapping Results			Parametric Test	
Relationship	**Age**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	Below 36	-0.080	0.106	1.288	-0.095	0.810
	46 to 55	-0.033	0.066	0.620		
Technostress * Indulgence -> Job burnout	Below 36	-0.120	0.116	1.480	-0.044	0.365
	46 to 55	-0.115	0.065	1.975**		
Technostress * Individualism -> Job burnout	Below 36	-0.047	0.074	0.714	-0.112	1.354
	46 to 55	0.050	0.047	1.272		

***p<0.01, **p<0.05, *p<0.1

Age below 36 vs Above 55

Table 22F, the multi-group analysis results for the direct relationships within the control variable of age (below36-above55)

		Bootstrapping Results			Parametric Test	
Relationship	**Age**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	Below 36	-0.153	0.095	1.429	-0.110	0.809
	Above 55	-0.030	0.097	0.258		
Indulgence -> Job burnout	Below 36	-0.467	0.098	4.869***	-0.213	1.483
	Above 55	-0.248	0.103	2.568**		
Power Distance -> Job burnout	Below 36	0.258	0.110	2.049**	0.212	1.058
	Above 55	0.019	0.157	0.090		
Technostress -> Job burnout	Below 36	0.163	0.143	1.013	-0.366	2.067**
	Above 55	0.506	0.111	4.596***		

***p<0.01, **p<0.05, *p<0.1

Table 23F, the multi-group analysis results for the moderator relationships within the control variable of age (below36-above55)

		Bootstrapping Results			Parametric Test	
Relationship	**Age**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	Below 36	-0.076	0.104	1.303	-0.048	0.405
	Above 55	-0.064	0.067	1.325		
Technostress * Indulgence -> Job burnout	Below 36	-0120	0.116	1.482	0.079	0.486
	Above 55	-0.039	0.112	0.830		
Technostress * Individualism -> Job burnout	Below 36	-0.048	0.074	0.710	-0.031	0.374
	Above 55	-0.009	0.047	0.446		

***p<0.01, **p<0.05, *p<0.1

Age 36-45 vs 46-55

Table 24F, the multi-group analysis results for the direct relationships within the control variable of age (36to45-46to55)

		Bootstrapping Results			Parametric Test	
Relationship	**Age**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	36 to 45	-0.037	0.129	0.095	-0.020	0.121
	46 to 55	0.006	0.109	0.075		
Indulgence -> Job burnout	36 to 45	-0.082	0.129	0.691	0.438	2.941**
	46 to 55	-0.504	0.087	6.034***		
Power Distance -> Job burnout	36 to 45	0.266	0.136	1.935**	0.277	1.529
	46 to 55	0.006	0.118	0.121		
Technostress -> Job burnout	36 to 45	0.551	0.095	6.090***	0.283	2.189**
	46 to 55	0.297	0.086	3.422***		

***p<0.01, **p<0.05, *p<0.1

Table 25F, the multi-group analysis results for the moderator relationships within the control variable of age (36to45-46to55)

		Bootstrapping Results			Parametric Test	
Relationship	**Age**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	36 to 45	-0.000	0.115	0.237	0.068	0.551
	46 to 55	-0.033	0.066	0.614		
Technostress * Indulgence -> Job burnout	36 to 45	0.047	0.079	0.698	0.183	1.791*
	46 to 55	-0.114	0.065	1.953**		
Technostress * Individualism -> Job burnout	36 to 45	0.076	0.066	3.237***	0.153	2.015**
	46 to 55	0.050	0.045	1.327		

***p<0.01, **p<0.05, *p<0.1

Age 36-45 vs Above 55

Table 26F, the multi-group analysis results for the direct relationships within the control variable of age (36to45-above55)

		Bootstrapping Results			Parametric Test	
Relationship	**Age**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	36 to 45	-0.037	0.131	0.093	0.013	0.079
	Above 55	-0.028	0.097	0.257		
Indulgence -> Job burnout	36 to 45	-0.078	0.129	0.689	0.175	1.072
	Above 55	0.253	0.103	2.570**		
Power Distance -> Job burnout	36 to 45	0.265	0.138	1.906**	0.249	1.213
	Above 55	0.019	0.153	0.092		
Technostress -> Job burnout	36 to 45	0.555	0.096	6.026***	0.066	0.453
	Above 55	0.506	0.110	4.638***		

***p<0.01, **p<0.05, *p<0.1

Table 27F, the multi-group analysis results for the moderator relationships within the control variable of age (36to45-above55)

		Bootstrapping Results			Parametric Test	
Relationship	**Age**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	36 to 45	0.001	0.112	0.242	0.115	0.897
	Above 55	-0.066	0.067	1.322		
Technostress * Indulgence -> Job burnout	36 to 45	0.047	0.081	0.685	0.148	1.070
	Above 55	-0.036	0.113	0.823		
Technostress * Individualism -> Job burnout	36 to 45	0.076	0.067	3.187***	0.234	2.910***
	Above 55	-0.009	0.047	0.455		

***p<0.01, **p<0.05, *p<0.1

Age 46-55 vs Above 55

Table 28F, the multi-group analysis results for the direct relationships within the control variable of age (46to55-above55)

		Bootstrapping Results			Parametric Test	
Relationship	**Age**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	46 to 55	0.007	0.109	0.075	0.033	0.216
	Above 55	-0.029	0.098	0.254		
Indulgence -> Job burnout	46 to 55	-0.502	0.088	6.026***	-0.263	1.971*
	Above 55	-0.253	0.101	2.627**		
Power Distance -> Job burnout	46 to 55	0.005	0.117	0.122	-0.028	0.150
	Above 55	0.017	0.154	0.092		
Technostress -> Job burnout	46 to 55	0.297	0.083	3.535***	-0.217	1.629
	Above 55	0.507	0.108	4.720***		

***p<0.01, **p<0.05, *p<0.1

Table 29F, the multi-group analysis results for the moderator relationships within the control variable of age (46to55-above55)

		Bootstrapping Results			Parametric Test	
Relationship	**Age**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	46 to 55	-0.035	0.067	0.613	0.047	0.491
	Above 55	-0.066	0.066	1.335		
Technostress * Indulgence -> Job burnout	46 to 55	-0.115	0.064	1.977**	-0.034	0.283
	Above 55	-0.036	0.113	0.826		
Technostress * Individualism -> Job burnout	46 to 55	0.049	0.045	1.325	0.080	1.212
	Above 55	-0.009	0.048	0.445		

***p<0.01, **p<0.05, *p<0.1

Demographic variable – Working hours per week

The demographic variable of *Working hours per week* contains six main groups; however, the number of respondents in the group *0 to 8 hours, 9 to 16 hours,* and *17 to 24 hours* are too small. Therefore, these groups have been merged with the group of *25 to 32 hours*. This means that the control variable remains with only three main categories, as indicated by the table below.

Table 30F, consolidation of the working hours per week groups

Groups	**Total**	**Groups**	**Total**
0 to 8 hours	7		
9 to 16 hours	4		
17 to 24 hours	9		
25 to 32 hours	27	**Less than 33 hours**	47
33 to 40 hours	150	**33 to 40 hours**	150
More than 40 hours	89	**More than 40 hours**	89

Working hours below 33 vs 33-40

Table 31F, the multi-group analysis results for the direct relationships within the control variable of working hours per week (below33-33to40)

		Bootstrapping Results			Parametric Test	
Relationship	**Hours**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	Below 33	-0.003	0.215	0.353	-0.007	0.038
	33 to 40	-0.079	0.077	0.896		
Indulgence -> Job burnout	Below 33	-0.340	0.138	2.531**	-0.022	0.134
	33 to 40	-0.324	0.084	3.888***		
Power Distance -> Job burnout	Below 33	-0.052	0.234	0.625	-0.257	1.424
	33 to 40	0.128	0.071	1.562		
Technostress -> Job burnout	Below 33	0.321	0.151	1.969**	-0.060	0.376
	33 to 40	0.362	0.077	4.662***		

***p<0.01, **p<0.05, *p<0.1

Table 32F, the multi-group analysis results for the moderator relationships within the control variable of working hours per week (below33-33to40)

		Bootstrapping Results			Parametric Test	
Relationship	**Hours**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	Below 33	0.033	0.087	0.420	-0.002	0.022
	33 to 40	-0.000	0.052	0.741		
Technostress * Indulgence -> Job burnout	Below 33	0.065	0.122	0.558	0.191	0.069
	33 to 40	-0.107	0.081	1.516		
Technostress * Individualism -> Job burnout	Below 33	0.074	0.078	1.112	0.054	0.825
	33 to 40	0.033	0.028	1.126		

***p<0.01, **p<0.05, *p<0.1

Working hours 33-40 vs Above 40

Table 33F, the multi-group analysis results for the direct relationships within the control variable of working hours per week (33to40-above40)

		Bootstrapping Results			Parametric Test	
Relationship	**Hours**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	33 to 40	-0.080	0.077	0.900	0.033	0.243
	Above 40	-0.006	0.118	0.309		
Indulgence -> Job burnout	33 to 40	-0.324	0.084	3.885***	-0.048	0.371
	Above 40	-0.365	0.091	4.088***		
Power Distance -> Job burnout	33 to 40	0.126	0.071	1.559	0.061	0.490
	Above 40	0.192	0.108	1.583		
Technostress -> Job burnout	33 to 40	0.361	0.077	4.654***	-0.029	0.235
	Above 40	0.336	0.093	3.538***		

***p<0.01, **p<0.05, *p<0.1

Table 34F, the multi-group analysis results for the moderator relationships within the control variable of working hours per week (33to40- above40)

		Bootstrapping Results			Parametric Test	
Relationship	**Hours**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	33 to 40	0.000	0.053	0.733	-0.113	1.317
	Above 40	-0.064	0.068	1.097		
Technostress * Indulgence -> Job burnout	33 to 40	-0.106	0.082	1.507	-0.093	0.729
	Above 40	-0.150	0.095	2.293**		
Technostress * Individualism -> Job burnout	33 to 40	0.032	0.028	1.131	-0.015	0.301
	Above 40	0.017	0.045	0.370		

***p<0.01, **p<0.05, *p<0.1

Working hours below 33 vs Above 40

Table 35F, the multi-group analysis results for the direct relationships within the control variable of working hours per week (below33-above40)

		Bootstrapping Results			Parametric Test	
Relationship	**Hours**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	Below 33	-0.003	0.215	0.354	0.039	0.177
	Above 40	-0.005	0.118	0.309		
Indulgence -> Job burnout	Below 33	-0.342	0.139	2.515**	-0.025	0.160
	Above 40	-0.365	0.091	4.116***		
Power Distance -> Job burnout	Below 33	-0.048	0.237	0.617	0.317	1.412
	Above 40	0.190	0.107	1.593		
Technostress -> Job burnout	Below 33	0.328	0.145	2.047**	0.031	0.193
	Above 40	0.336	0.091	3.616***		

***p<0.01, **p<0.05, *p<0.1

Table 36F, the multi-group analysis results for the moderator relationships within the control variable of working hours per week (below33-above40)

		Bootstrapping Results			Parametric Test	
Relationship	**Hours**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	Below 33	0.028	0.088	0.416	-0.111	0.995
	Above 40	-0.061	0.067	1.108		
Technostress * Indulgence -> Job burnout	Below 33	0.073	0.129	0.526	-0.285	1.809*
	Above 40	-0.148	0.093	2.335**		
Technostress * Individualism -> Job burnout	Below 33	0.075	0.074	1.159	-0.070	0.863
	Above 40	0.017	0.044	0.378		

***p<0.01, **p<0.05, *p<0.1

Demographic variable – Years of working experience

The demographic variable of years of experience represents five main groups; however, the number of respondents in groups *6 to 10 years* and *16 to 20 years* are very small. Therefore, these groups have been merged with other groups.

Table 37F, consolidation of years of working experience groups

Groups	**Total**	**Groups**	**Total**
Less than 6 years	32		
6 to 10 years	18	**Less than 11 years**	50
11 to 15 years	42	**11 to 20 years**	64
16 to 20 years	22	**More than 20 years**	172
More than 20 years	172		

Experience less than 11 years vs 11-20 years

Table 38F, the multi-group analysis results for the direct relationships within the control variable of years of working experience (below11-11to20)

		Bootstrapping Results			Parametric Test	
Relationship	**Experience**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	Below 11	-0.222	0.118	1.700*	0.137	0.686
	11 to 20	0.009	0.152	0.423		
Indulgence -> Job burnout	Below 11	-0.340	0.157	2.427**	0.167	0.834
	11 to 20	-0.211	0.130	1.639		
Power Distance -> Job burnout	Below 11	0.308	0.111	2.513**	-0.021	0.123
	11 to 20	0.251	0.125	2.057**		
Technostress -> Job burnout	Below 11	0.139	0.186	0.790	0.361	1.860*
	11 to 20	0.502	0.094	5.408***		

***p<0.01, **p<0.05, *p<0.1

Table 39F, the multi-group analysis results for the moderator relationships within the control variable of years of working experience (below11-11to20)

		Bootstrapping Results			Parametric Test	
Relationship	**Experience**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	Below 11	-0.031	0.101	0.624	0.077	0.533
	11 to 20	-0.010	0.101	0.136		
Technostress * Indulgence -> Job burnout	Below 11	-0.105	0.118	1.745*	0.347	2.286**
	11 to 20	0.087	0.099	1.429		
Technostress * Individualism -> Job burnout	Below 11	-0.051	0.087	0.889	0.110	0.988
	11 to 20	0.052	0.072	0.446		

***p<0.01, **p<0.05, *p<0.1

Experience less than 11 years vs more than 20 years

Table 40F the multi-group analysis results for the direct relationships within the control variable of years of working experience (below11-above20)

		Bootstrapping Results			Parametric Test	
Relationship	**Experience**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	Below 11	-0.223	0.115	1.749	0.254	1.832*
	Above 20	0.024	0.067	0.782		
Indulgence -> Job burnout	Below 11	-0.340	0.155	2.458**	-0.020	0.126
	Above 20	-0.391	0.072	5.565***		
Power Distance -> Job burnout	Below 11	0.308	0.111	2.507**	-0.292	1.662*
	Above 20	0.011	0.089	0.153		
Technostress -> Job burnout	Below 11	0.134	0.188	0.782	0.248	1.518
	Above 20	0.392	0.070	5.673***		

***p<0.01, **p<0.05, *p<0.1

Table 41F, the multi-group analysis results for the moderator relationships within the control variable of years of working experience (below11-above20)

		Bootstrapping Results			Parametric Test	
Relationship	**Experience**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	Below 11	-0.028	0.103	0.611	-0.001	0.006
	Above 20	-0.052	0.052	1.220		
Technostress * Indulgence -> Job burnout	Below 11	-0.107	0.120	1.710*	0.097	0.789
	Above 20	-0.099	0.057	1.924*		
Technostress * Individualism -> Job burnout	Below 11	-0.051	0.086	0.907	0.124	1.396
	Above 20	0.047	0.041	1.123		

***p<0.01, **p<0.05, *p<0.1

Experience 11-20 years vs more than 20 years

Table 42F, the multi-group analysis results for the direct relationships within the control variable of years of working experience (11to20-above20)

		Bootstrapping Results			Parametric Test	
Relationship	**Experience**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	11 to 20	0.008	0.149	0.431	-0.117	0.808
	Above 20	0.025	0.069	0.759		
Indulgence -> Job burnout	11 to 20	-0.211	0.135	1.584	0.187	1.302
	Above 20	-0.387	0.073	5.523***		
Power Distance -> Job burnout	11 to 20	0.250	0.128	2.002**	0.271	1.652
	Above 20	0.012	0.088	0.155		
Technostress -> Job burnout	11 to 20	0.500	0.095	5.353***	0.113	0.888
	Above 20	0.394	0.070	5.665***		

***p<0.01, **p<0.05, *p<0.1

Table 43F, the multi-group analysis results for the moderator relationships within the control variable of years of working experience (11to20-above20)

		Bootstrapping Results			Parametric Test	
Relationship	**Experience**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	11 to 20	-0.007	0.099	1.209	0.077	0.737
	Above 20	-0.053	0.053	0.089		
Technostress * Indulgence -> Job burnout	11 to 20	0.088	0.101	1.403	0.250	2.225**
	Above 20	-0.098	0.058	1.881*		
Technostress * Individualism -> Job burnout	11 to 20	0.052	0.069	0.460	-0.014	0.176
	Above 20	0.046	0.042	1.102		

***p<0.01, **p<0.05, *p<0.1

Demographic variable – Years in current role

The demographic variable of years in current role consists of five groups; however, the number of respondents in the group *16 to 20 years* is too small. Therefore, this group was merged with the group of more than 20 years' experience.

Table 44F, consolidation of years in current role groups

Groups	**Total**	**Groups**	**Total**
Less than 6 years	133	**Less than 6 years**	133
6 to 10 years	57	**6 to 10 years**	57
11 to 15 years	41	**11 to 15 years**	41
16 to 20 years	17	**More than 16 years**	55
More than 20 years	38		

Current role less than 6 years vs 6-10 years

Table 45F, the multi-group analysis results for the direct relationships within the control variable of years in current role (below6-6to10)

		Bootstrapping Results			Parametric Test	
Relationship	**Current role**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	Below 6	-0.065	0.087	0.487	-0.175	1.106
	6 to 10	0.101	0.136	0.981		
Indulgence -> Job burnout	Below 6	-0.341	0.078	4.471***	0.161	1.066
	6 to 10	-0.465	0.144	3.541***		
Power Distance -> Job burnout	Below 6	0.160	0.108	1.278	-0.127	0.645
	6 to 10	0.239	0.165	1.609		
Technostress -> Job burnout	Below 6	0.330	0.082	4.025***	0.107	0.692
	6 to 10	0.251	0.142	1.561		

***p<0.01, **p<0.05, *p<0.1

Table 46F, the multi-group analysis results for the moderator relationships within the control variable of years in current role (below6-6to10)

		Bootstrapping Results			Parametric Test	
Relationship	**Current role**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	Below 6	-0.020	0.061	0.404	0.214	1.748*
	6 to 10	-0.122	0.123	1.942*		
Technostress * Indulgence -> Job burnout	Below 6	-0.055	0.075	1.087	0.218	1.550
	6 to 10	-0.202	0.128	2.329**		
Technostress * Individualism -> Job burnout	Below 6	0.037	0.044	1.490	0.020	0.245
	6 to 10	0.047	0.073	0.621		

***p<0.01, **p<0.05, *p<0.1

Current role less than 6 years vs 11-15 years

Table 47F, the multi-group analysis results for the direct relationships within the control variable of years in current role (below6-11to15)

		Bootstrapping Results			Parametric Test	
Relationship	**Current role**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	Below 6	-0.066	0.086	0.492	-0.300	1.701*
	11 to 15	0.195	0.158	1.631		
Indulgence -> Job burnout	Below 6	-0.339	0.078	4.455***	0.124	0.777
	11 to 15	-0.391	0.137	3.468***		
Power Distance -> Job burnout	Below 6	0.163	0.111	1.245	-0.126	0.567
	11 to 15	0.196	0.175	1.508		
Technostress -> Job burnout	Below 6	0.327	0.082	3.993***	-0.272	1.736*
	11 to 15	0.596	0.094	6.384***		

***p<0.01, **p<0.05, *p<0.1

Table 48F, the multi-group analysis results for the moderator relationships within the control variable of years in current role (below6-11to15)

		Bootstrapping Results			Parametric Test	
Relationship	**Current role**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	Below 6	-0.020	0.059	0.419	0.169	1.361
	11 to 15	-0.030	0.119	1.632		
Technostress * Indulgence -> Job burnout	Below 6	-0.056	0.075	1.080	-0.009	0.062
	11 to 15	-0.031	0.092	0.782		
Technostress * Individualism -> Job burnout	Below 6	0.038	0.044	0.607	-0.008	0.077
	11 to 15	0.050	0.121	1.493		

***p<0.01, **p<0.05, *p<0.1

Current role less than 6 years vs more than 15 years

Table 49F, the multi-group analysis results for the direct relationships within the control variable of years in current role (below6-above15)

		Bootstrapping Results			Parametric Test	
Relationship	**Current role**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	Below 6	-0.066	0.085	0.493	0.099	0.679
	Above 15	-0.148	0.095	1.486		
Indulgence -> Job burnout	Below 6	-0.340	0.077	4.561***	-0.082	0.530
	Above 15	-0.257	0.154	1.736*		
Power Distance -> Job burnout	Below 6	0.162	0.109	1.272	0.128	0.659
	Above 15	-0.012	0.153	0.065		
Technostress -> Job burnout	Below 6	0.330	0.082	4.009***	-0.098	0.634
	Above 15	0.434	0.139	3.062***		

***p<0.01, **p<0.05, *p<0.1

Table 50F, the multi-group analysis results for the moderator relationships within the control variable of years in current role (below6-above15)

		Bootstrapping Results			Parametric Test	
Relationship	**Current role**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	Below 6	-0.020	0.060	0.410	0.057	0.504
	Above 15	-0.036	0.098	0.828		
Technostress * Indulgence -> Job burnout	Below 6	-0.055	0.074	1.089	-0.015	0.106
	Above 15	-0.013	0.136	0.485		
Technostress * Individualism -> Job burnout	Below 6	0.039	0.044	1.486	-0.007	0.081
	Above 15	0.042	0.079	0.910		

***p<0.01, **p<0.05, *p<0.1

Current Role 6-10 years vs 11-15 years

Table 51F, the multi-group analysis results for the direct relationships within the control variable of years in current role (6to10-11to15)

		Bootstrapping Results			Parametric Test	
Relationship	**Current role**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	6 to 10	0.096	0.133	1.002	-0.125	0.608
	11 to 15	0.192	0.160	1.609		
Indulgence -> Job burnout	6 to 10	-0.467	0.146	3.507***	-0.037	0.182
	11 to 15	-0.391	0.136	3.481***		
Power Distance -> Job burnout	6 to 10	0.241	0.163	1.632	0.001	0.005
	11 to 15	0.196	0.178	1.487		
Technostress -> Job burnout	6 to 10	0.248	0.139	1.596	-0.378	2.074**
	11 to 15	0.594	0.099	6.030***		

***p<0.01, **p<0.05, *p<0.1

Table 52F, the multi-group analysis results for the moderator relationships within the control variable of years in current role (6to10-11to15)

		Bootstrapping Results			Parametric Test	
Relationship	**Current role**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	6 to 10	-0.120	0.125	1.918*	-0.045	0.257
	11 to 15	-0.026	0.117	1.653*		
Technostress * Indulgence -> Job burnout	6 to 10	-0.207	0.128	0.791	-0.227	1.348
	11 to 15	-0.033	0.091	2.330**		
Technostress * Individualism -> Job burnout	6 to 10	0.047	0.072	0.630	-0.028	0.215
	11 to 15	0.049	0.119	0.616		

***p<0.01, **p<0.05, *p<0.1

Current role 6-10 years vs more than 15 years

Table 53F, the multi-group analysis results for the direct relationships within the control variable of years in current role (6to10-above15)

		Bootstrapping Results			Parametric Test	
Relationship	**Current role**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	6 to 10	0.096	0.137	0.972	0.274	1.636
	Above 15	-0.145	0.097	1.449		
Indulgence -> Job burnout	6 to 10	-0.466	0.146	3.491***	-0.243	1.149
	Above 15	-0.258	0.155	1.724		
Power Distance -> Job burnout	6 to 10	0.240	0.166	1.603	0.255	1.145
	Above 15	-0.014	0.152	0.066		
Technostress -> Job burnout	6 to 10	0.246	0.140	1.587	-0.205	1.044
	Above 15	0.433	0.141	3.029***		

***p<0.01, **p<0.05, *p<0.1

Table 54F, the multi-group analysis results for the moderator relationships within the control variable of years in current role (6to10- above15)

		Bootstrapping Results			Parametric Test	
Relationship	**Current role**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	6 to 10	-0.122	0.125	1.909*	-0.158	0.993
	Above 15	-0.035	0.099	0.827		
Technostress * Indulgence -> Job burnout	6 to 10	-0.200	0.129	2.321**	-0.233	1.260
	Above 15	-0.010	0.135	0.485		
Technostress * Individualism -> Job burnout	6 to 10	0.047	0.075	0.603	-0.027	0.252
	Above 15	0.041	0.077	0.937		

***p<0.01, **p<0.05, *p<0.1

Current role 11-15 years vs more than 15 years

Table 55F, the multi-group analysis results for the direct relationships within the control variable of years in current role (11to15- above15)

		Bootstrapping Results			Parametric Test	
Relationship	**Current role**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Individualism -> Job burnout	11 to 15	0.190	0.161	1.603	0.399	2.282**
	Above 15	-0.147	0.094	1.491		
Indulgence -> Job burnout	11 to 15	-0.388	0.139	3.404***	-0.205	0.974
	Above 15	-0.262	0.152	1.764		
Power Distance -> Job burnout	11 to 15	0.196	0.182	1.449	0.254	1.092
	Above 15	-0.012	0.151	0.066		
Technostress -> Job burnout	11 to 15	0.595	0.093	6.425***	0.173	0.986
	Above 15	0.430	0.137	3.124***		

***p<0.01, **p<0.05, *p<0.1

Table 56F, the multi-group analysis results for the moderator relationships within the control variable of years in current role (11to15- above15)

		Bootstrapping Results			Parametric Test	
Relationship	**Current role**	**Std Beta**	**Std Error**	**t-value**	**Std Beta-Dif**	**t-value**
Technostress * Power distance -> Job burnout	11 to 15	-0.028	0.121	1.607	-0.112	0.744
	Above 15	-0.035	0.097	0.844		
Technostress * Indulgence -> Job burnout	11 to 15	-0.032	0.090	0.801	-0.006	0.037
	Above 15	-0.008	0.136	0.484		
Technostress * Individualism -> Job burnout	11 to 15	0.050	0.077	0.596	0.001	0.007
	Above 15	0.041	0.123	0.934		

***p<0.01, **p<0.05, *p<0.1

Appendix G – Formative Assessment

As mentioned in chapter four, most previous studies approach technostress as a second-order formative construct. Initially, the aim was to do the same for this study. However, due to a mistake in the survey preparation and deployment, only ten of the 25 relevant questions have been asked. This leaves the sub-constructs of technostress with only two measures per construct (except for techno-insecurity), making it unsuitable for a proper formative assessment of the technostress construct. Nevertheless, an attempt was made to determine the outcome of the hypotheses when approaching technostress from a formative perspective.

The analysis started with an assessment of the reliability and validity of the formative technostress construct. The construct of techno-insecurity only contained a single measure, and, therefore, measure TS10 was omitted from the model. The other nine measures are related to the remaining four technostress-subconstructs. The Variance Inflation Factors (VIFs) need to be calculated to assess the quality of the technostress construct. The VIF-values need to be below five; otherwise, there are collinearity issues (Hair et al., 2017). Table 1G indicates that all values are nicely below the threshold of 5. Furthermore, assessment of outer loadings and outer weights confirmed that all nine measures could remain in the model because all of them are highly significant (Hair et al., 2017).

Table 1G, reliability and validity testing of formative construct

Measure	VIF	Outer Loading	Decision
TS01	1.561	5.233***	Retain in the model
TS02	1.561	4.393***	Retain in the model
TS03	1.325	15.531***	Retain in the model
TS04	1.196	13.135***	Retain in the model
TS05	1.365	16.987***	Retain in the model
TS06	1.002	8.698***	Retain in the model
TS07	1.325	11.496***	Retain in the model
TS08	1.438	16.859***	Retain in the model
TS09	1.002	2.352**	Retain in the model

***p<0.01, **p<0.05, *p<0.1

After the quality check of the technostress construct, an assessment of the significance and relevance of the relationships has been executed by using the Partial Least Squares Structural Equation Modeling Technique (PLS-SEM) in SmartPLS 2.0. As the results in chapter 5, the main relationship between technostress and job burnout is highly significant (Table 2G). Furthermore, the results shows a moderate effect ($f^2 = 0.148$), which is a little bit lower than the measured effect size when technostress was a reflective construct.

Table 2G, direct relationships for hypothesis testing

Hypothesis	Relationship	Std Beta	Std Error	t-value	Decision	f^2
n/a	Individualism -> Job burnout	-0.014	0.050	0.190	Not supported	0.000
n/a	Indulgence -> Job burnout	-0.358	0.063	5.825	Supported***	0.177
n/a	Power distance -> Job burnout	0.127	0.057	2.216	Supported**	0.023
H1	Technostress -> Job burnout	0.329	0.058	5.669	Supported***	0.148

***p<0.01, **p<0.05, *p<0.1

The remaining three hypotheses state that each of the three constructs moderates the relationship between technostress and job burnout. The product indicator approach tested the moderation variables in SmartPLS. The moderation analysis results indicate that the hypothesis for power distance does not find support, whereas, indulgence ($p<0.05$) and individualism ($p<0.01$) do significantly moderate the relationship between technostress and job burnout.

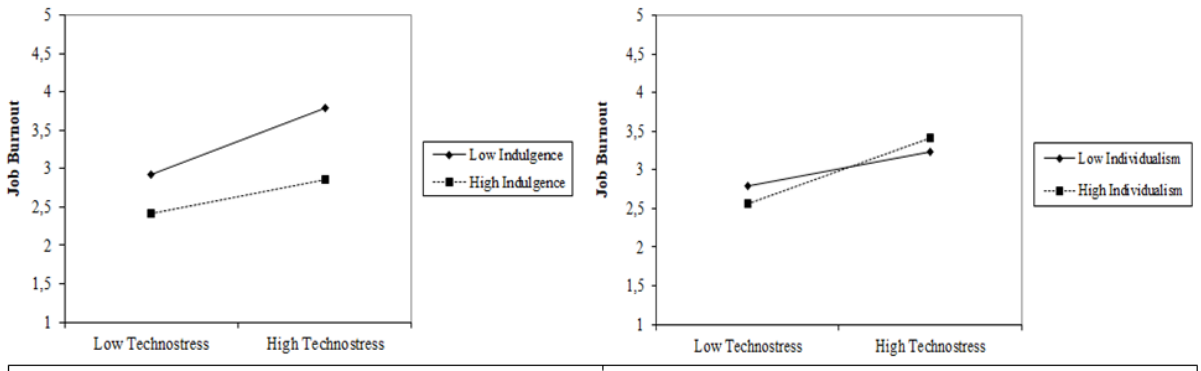
Table 3G, moderation relationships for general hypothesis testing

Hypo-thesis	Relationship	Std Beta	Std Error	t-value	Decision	f^2
H2	Technostress * Power Distance -> Job burnout	0.054	0.055	0.995	Not supported	0.005
H3	Technostress * Indulgence -> Job burnout	-0.109	0.043	2.484	Supported**	0.029
H4	Technostress * Individualism -> Job burnout	0.101	0.070	3.060	Supported***	0.022

***p<0.01, **p<0.05, *p<0.1

For the dimension of indulgence, the moderating effect is highly significant. Before accepting or rejecting the hypothesis, it is useful to understand the pattern of significant interactions between technostress and indulgence. Therefore, the interactions are plotted according to Aiken and West (1991) and Dawson (2014) standards. Figure 1Ga plots the slopes one standard deviation above and below the mean. This two-way interaction indicates negative moderation; however, it also visualizes that the effect is small, which is confirmed by the effect size (f^2 = 0.029). When the level of technostress increases, people with a low level of indulgence will experience a higher increase in job burnout than employees with high indulgence. These results are almost the same as in chapter 5; however, in this case, the relationship is highly significant.

The results of the moderating effect of individualism show a highly significant value ($p<0.01$). In order to gain an understanding of the effect, interactions are plot in the same way as for indulgence. Figure 1Gb shows that when the level of technostress increases, the level of job burnout increases too; however, for people characterized by high individualism, the increase in technostress is higher than for people characterized by low individualism. This indicates that the dimension of individualism impacts the relationship, represented by a small effect size (f^2 = 0.022).



A. Job burnout – high and low Technostress in the presence of high and low Indulgence.

B. Job burnout – high and low Technostress in the presence of high and low Individualism

Figuur 1G, two-way unstandardized interaction analysis

When comparing the outcomes of the structural models (technostress reflective vs. technostress formative), it almost results in the same conclusion. In both cases, the direct relationship between technostress and job burnout is highly significant. Both cultural dimensions of indulgence and individualism find support in the model; however, when measuring technostress from a formative angle, the evidence is more significant. Moreover, where hypothesis four does not find support in the reflective model, it now provides clear evidence for a (small) moderating effect on the relationship between technostress and job burnout. This implies that measuring technostress from a formative perspective could enhance the quality of the model and lead to more findings. However, it is important to note that the formative measurement is not entirely valid for this research because each sub-construct would only have two measures. Nevertheless, these findings indicate that it would be interesting to conduct the same study with the proper measures for measuring as a second-order formative construct. This could possibly provide more support for the impact of cultural dimensions on the relationship between technostress and job burnout than found in the current study.